

64946
SEARCH REQUEST FORM

Requestor's Name: T.A. Solola Serial Number: 09/622,001
Date: 4/10/02 Phone: 308-4690 Art Unit: 1626
CM1 3E13 3D19

Search Topic:

See attached
Please write a detailed statement of search topic. Describe specifically as possible the subject matter to be searched. Define any terms that may have a special meaning. Give examples or relevant citations, authors keywords, etc., if known. For sequences, please attach a copy of the sequence. You may include a copy of the broadest and/or most relevant claim(s).

Pls. search claims 1-4, 14-21
See attached bib sheet.

Point of Contact
Susan Hanley
Technical Info. Specialist
CM1 6B05 Tel: 305-4053

Claims 2-4 and 14-20 are examples

Pls. display Hits, then 1 bib & Abs

1-3

Thanks.

STAFF USE ONLY

4/15
Date completed: 4/24
Searcher: Hanley
Terminal time: _____
Elapsed time: _____
CPU time: _____
Total time: _____
Number of Searches: _____
Number of Databases: _____

Search Site
____ STIC
____ CM-1
____ Pre-S
Type of Search
____ N.A. Sequence
____ A.A. Sequence
____ Structure
____ Bibliographic

Vendors
____ IG Suite
____ STN
____ Dialog
____ APS
____ Geninfo
____ SDC
____ DARC/Questel
____ Other

TEXT Search for Claim 3

SOLOLA 09/622,001

(lactone product)

=> d que 111

L1	768	SEA	FILE=REGISTRY	ABB=ON	PLU=ON	OC4/ES AND "LACTON"
L2	271	SEA	FILE=REGISTRY	ABB=ON	PLU=ON	L1 AND "HYDROXY"
L3	79660	SEA	FILE=REGISTRY	ABB=ON	PLU=ON	"IMID"
L4	2774	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L2/PREP
L5	1849	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L3/CAT
L7	14655	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	?IMID?(L)?CATALYST?
L8	2182	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	HYDROXY(2A)?LACTON?
L9	239	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L8(L)PREP/RL
L10	23	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	(L4 OR L9) AND (L5 OR L7)
L11	7	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L10 AND ?IMID?/AB

=> d bib abs l11 1

L11 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2002 ACS
AN 2001:178468 HCAPLUS
DN 134:207608
TI Method for production of aldehydes from ethers
IN Ishii, Yasutaka; Nakano, Tatsuya
PA Daicel Chemical Industries, Ltd., Japan
SO U.S., 9 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

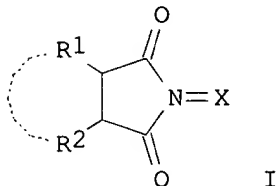
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6201156	B1	20010313	US 1999-394101	19990913
OS	CASREACT 134:207608; MARPAT 134:207608				
AB	Ethers RaCHRbORc (Ra = H, hydrocarbon group, heterocyclic group; Rb = H, OH, substituted oxy group; Rc = hydrocarbon group, heterocyclic group; Ra and Rc may be combined to form a ring with the adjacent carbon atom and oxygen atom) are reacted with nitrogen monoxide in the presence of an imide catalyst to give aldehydes. E.g., a mixt. of 1 mmol of 1-hydroxyphthalan, 0.1 mmol of N- hydroxyphthalimide , and 5 mL of acetonitrile was stirred at 60.degree. C for 2 h. Isolation of products in the reaction mixt. by column chromatog. on a silica gel revealed that 1-hydroxyphthalan was converted, at a rate of 99%, into phthalaldehyde (yield: 95%).				

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d bib abs 111 2

L11 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2002 ACS
 AN 2000:421066 HCAPLUS
 DN 133:60353
 TI preparation of organic compounds with **imide catalysts**
 IN Ishii, Yasutaka; Iwahama, Takahiro; Nakano, Tatsuya
 PA Daicel Chemical Industries, Ltd., Japan
 SO PCT Int. Appl., 133 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000035835	A1	20000622	WO 1999-JP6891	19991209
	W: JP, KR, US				
	RW: DE, FR, GB				
	EP 1055654	A1	20001129	EP 1999-959710	19991209
	R: DE, FR, GB				
PRAI	JP 1998-353621	A	19981211		
	JP 1998-353622	A	19981211		
	JP 1999-65651	A	19990311		
	JP 1999-136340	A	19990517		
	WO 1999-JP6891	W	19991209		
OS	MARPAT 133:60353				
GI					



AB **Imide** compd. I (R1 and R2 are H, halogen alkyl, and etc., or are united to form a double bond or a ring, X is oxygen or hydroxyl) is a reaction **catalyst** for a stable radical-forming compd. (including oxygen compds. having carbon-hydrogen bonds adjacent to the oxygen atom, carbonyl compds. and compds. having hydrocarbon groups bearing methyne carbon) with a radical-scavenging compd. (including unsatd. compds., compds. having hydrocarbon groups bearing methyne carbon) in the presence of mol. oxygen. Thus, Et acrylate 3 mmol and 2-propanol 3 mL were reacted in the presence of N-hydroxyphthalimide 0.6 mmol and cobalt (II) acetate 0.015 mmol cobalt (III) acetylacetate 0.045 mmol to give Et 2,4-dihydroxy-4-methylmetanate 35%, .alpha.-hydroxy-.gamma.,.gamma.-dimethyl.gamma.-butyrolactone 35% at the conversion of Et acrylate 81%.

RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d bib abs 111 3

L11 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2002 ACS

AN 1999:728061 HCAPLUS

DN 131:336738

TI Preparation of acetals or carbonyl compounds by oxidation of ethers

IN Ishii, Yasutaka; Nakano, Tatsuya

PA Daicel Chemical Industries, Ltd., Japan; Ishi, Yasuytaka

SO Jpn. Kokai Tokkyo Koho, 13 pp.

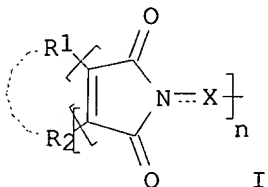
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11315036	A2	19991116	JP 1998-99996	19980326
PRAI	JP 1998-69459		19980304		
OS	CASREACT 131:336738; MARPAT 131:336738				
GI					



AB Ethers are catalytically oxidized with O in the presence of **imide** I [R1, R2 = H, halo alkyl, aryl, cycloalkyl, OH, alkoxy, etc.; R1R2 may form double bond or (non)arom. ring; X = O, OH; n = 1-3] **catalysts** . (RbOCRa1Ra2)2O (Ra1, Ra2 = H, hydrocarbyl, heterocyclyl; Rb = hydrocarbyl, heterocyclyl; Ra1Ra2, Ra1Rb, or Ra2Rb may form ring) or Ra1CRa2O (Ra1, Ra2 = same as above) are prepd. from Ra1CHRa2ORb (Ra1, Ra2, Rb = same as above). Isochroman was oxidized in the presence of N-**hydroxyphthalimide** in acetonitrile under O at 60.degree. for 7 h to give 1,1'-oxydiisochroman, which was reacted with EtOH at room temp. for 30 min to give 68% 1-ethoxyisochroman.

=> d bib abs 111 4

L11 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2002 ACS

AN 1999:431898 HCAPLUS

DN 131:73547

TI Preparation of 2-alkyl-3-hydroxy-.gamma.-butyrolactone derivatives by treatment of 3-hydroxy-.gamma.-butyrolactone with hexamethyldisilazane metal salt and alkylation with alkyl halides

IN Higamie, Kazumasa; Furukawa, Yoshiro; Katsumura, Shigeo; Takehira, Yoshikazu

PA Daiso Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

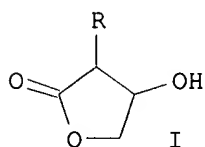
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11189589	A2	19990713	JP 1997-359452	19971226
	JP 3180749	B2	20010625		
	CA 2317043	AA	19990708	CA 1998-2317043	19981207
	WO 9933816	A1	19990708	WO 1998-JP5518	19981207
	W: CA, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 1048662	A1	20001102	EP 1998-957202	19981207
	R: FR, GB, NL				
	US 6268515	B1	20010731	US 2000-582329	20000623
PRAI	JP 1997-359452	A	19971226		
	WO 1998-JP5518	W	19981207		
OS	CASREACT 131:73547; MARPAT 131:73547				
GI					



AB The title 2-alkyl-3-hydroxy-.gamma.-butyrolactone derivs. (I; R = C1-6 alkyl, 3-6- membered cycloalkyl, aralkyl, 2-alkenyl, acyl, .alpha.-hydroxyalkyl, alkoxycarbonylalkyl, alkoxycarbonyl) are prepd. by treatment of 3-hydroxy-.gamma.-butyrolactone with hexamethyldisilazane metal salt and reaction with electrophiles, in particular alkyl halides (alkylating agents). The reaction is carried out in the presence of reaction promoters such as 1,3-dimethyl-2-imidazolidinone, 1,3-dimethyl-3,4,5,6-tetrahydro-2-pyrimidinone, or tetramethylethylenediamine. The use of optically active (S)- and (R)-3-hydroxy-.gamma.-butyrolactone gives optically active gives optically active (2S,3S)- and (2R,3R)-3-hydroxy-.gamma.-butyrolactone derivs., resp. The hexamethyldisilazane metal salt is superior to lithium diisopropylamide. Moreover, the reaction promoters enhance the alkylation reaction to give in good yields in a short period of time, I which are useful as intermediates for drugs and agrochems. Thus, 25 mmol lithium hexamethyldisilazide in 25 mL THF was cooled to -45.degree., followed by adding a soln. of 9.913 mmol (S)-3-hydroxy-.gamma.-butyrolactone in 20 mL

THF, stirring the mixt. for 30 min at -45.degree., and adding dropwise a soln. of 1.89 mmol benzyl bromide and 2.9 mL 1,3-dimethyl-2-imidazolidinone in 20 mL THF, and the resulting mixt. was stirred at -45.degree. for 30 min, then treated with aq. satd. NH₄Cl soln. at -45.degree., and extd. with EtOAc. The EtOAc ext. was dried over MgSO₄, concd. in vacuo, and purified by silica gel chromatog. to give 80% (2S,3S)-2-benzyl-3-hydroxy-.gamma.-butyrolactone vs. 40% yield without using 1,3-dimethyl-2-imidazolidinone and 30% yield using lithium diisopropylamide and 1,3-dimethyl-2-imidazolidinone.

=> d ind 111 4

L11 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2002 ACS

IC ICM C07D307-33

CC 27-6 (Heterocyclic Compounds (One Hetero Atom))

ST alkylhydroxybutyrolactone prepn; hydroxybutyrolactone metalation
hexamethyldisilazane metal salt; alkylation alkyl halide;
dimethylimidazolidinone alkylation promoter

IT Alkylation **catalysts**

(**dimethylimidazolidinone**, **dimethyltetrahydropyrimidinone**
, or tetramethylethylenediamine; prepn. of alkylhydroxy-.gamma.-
butyrolactone derivs. by metalation of hydroxy-.gamma.-butyrolactone
with hexamethyldisilazane metal salt and alkylation)

IT Alkylation

Metalation

(prepn. of 2-alkyl-3-hydroxy-.gamma.-butyrolactone derivs. by treatment
of 3-hydroxy-.gamma.-butyrolactone with hexamethyldisilazane metal salt
and alkylation with alkyl halides)

IT 80-73-9, 1,3-Dimethyl-2-imidazolidinone 110-18-9 7226-23-5,

1,3-Dimethyl-3,4,5,6-tetrahydro-2-pyrimidinone

RL: CAT (Catalyst use); USES (Uses)

(prepn. of 2-alkyl-3-hydroxy-.gamma.-butyrolactone derivs. by treatment
of 3-hydroxy-.gamma.-butyrolactone with hexamethyldisilazane metal salt
and alkylation with alkyl halides)

IT 74-88-4, reactions 100-39-0, Benzyl bromide 100-44-7, Benzyl chloride,
reactions 106-95-6, Allyl bromide, reactions 107-05-1, Allyl chloride
1070-89-9, Sodium hexamethyldisilazide 4039-32-1, Lithium
hexamethyldisilazide 5469-16-9, 3-Hydroxy-.gamma.-butyrolactone
7331-52-4, (S)-3-Hydroxy-.gamma.-butyrolactone 40949-94-8, Potassium
hexamethyldisilazide 58081-05-3, (R)-3-Hydroxy-.gamma.-butyrolactone
RL: RCT (Reactant); RACT (Reactant or reagent)

(prepn. of 2-alkyl-3-hydroxy-.gamma.-butyrolactone derivs. by treatment
of 3-hydroxy-.gamma.-butyrolactone with hexamethyldisilazane metal salt
and alkylation with alkyl halides)

IT **112138-02-0P**, (2S,3S)-2-Methyl-3-hydroxy-.gamma.-

butyrolactone 138922-92-6P **229030-08-4P**,

(2S,3S)-2-Benzyl-3-hydroxy-.gamma.-butyrolactone

RL: SPN (Synthetic preparation); **PREP (Preparation)**

(prepn. of 2-alkyl-3-hydroxy-.gamma.-butyrolactone
derivs. by treatment of 3-hydroxy-.gamma.-
butyrolactone with hexamethyldisilazane metal salt and
alkylation with alkyl halides)

=> d bib abs 111 5

L11 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2002 ACS

AN 1996:744339 HCAPLUS

DN 126:74627

TI Intramolecular Regioselective Insertion into Unactivated Prochiral Carbon-Hydrogen Bonds with Diazoacetates of Primary Alcohols Catalyzed by Chiral Dirhodium(II) Carboxamidates. Highly Enantioselective Total Synthesis of Natural Lignan Lactones

AU Bode, Jeffrey W.; Doyle, Michael P.; Protopopova, Marina N.; Zhou, Qi-Lin

CS Department of Chemistry, Trinity University, San Antonio, TX, 78212, USA

SO J. Org. Chem. (1996), 61(26), 9146-9155

CODEN: JOCEAH; ISSN: 0022-3263

PB American Chemical Society

DT Journal

LA English

OS CASREACT 126:74627

AB Intramol. insertion into unactivated prochiral C-H bonds of 3-aryl-1-Pr diazoacetates catalyzed by dirhodium(II) tetrakis[methyl 1-(3-Ph propanoyl)imidazolidin-2-one-4(R or S)-carboxylate], Rh₂(4R-MPPIM)₄ or Rh₂(4S-MPPIM)₄, occurred in 91-96% ee and with virtually complete regiocontrol for the formation of .beta.-benzyl-.gamma.-butyrolactones. This methodol. has been applied to the total synthesis of dibenzylbutyrolactone lignans (-)- and (+)-enterolactone, (-)- and (+)-hinokinin, and (+)-arctigenin from substituted cinnamic acids in 19-27% overall yields. Aryltetralin lignan (+)-isodeoxypodophyllotoxin was prepd. from the reactant 3,4-(methylenedioxy)cinnamic acid in 36% yield overall, and the lactone precursor to (+)-isolauricerisinol was formed in 96.5% ee and 23% yield overall. Applications of the chiral Rh₂(MPPIM)₄ **catalysts** to fully aliph. systems resulting in the formation of .beta.-substituted-.gamma.-butyrolactones with high regiocontrol and with 93-96% ee have demonstrated the generality of this methodol. A model that provides accurate predictions of .beta.-substituted-.gamma.-butyrolactone abs. configurations in these asym. metal carbene transformations was described.

=> d bib abs 111 6

L11 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2002 ACS

AN 1995:833674 HCAPLUS

DN 124:8482

TI Optimization of Enantiocontrol for Carbon-Hydrogen Insertion with Chiral Dirhodium(II) Carboxamidates. Synthesis of Natural Dibenzylbutyrolactone Lignans from 3-Aryl-1-propyl Diazoacetates in High Optical Purity

AU Doyle, Michael P.; Protopopova, Marina N.; Zhou, Qi-Lin; Bode, Jeffrey W.; Simonsen, Stanley H.; Lynch, Vincent

CS Department of Chemistry, Trinity University, San Antonio, TX, 78212, USA

SO J. Org. Chem. (1995), 60(21), 6654-5

CODEN: JOCEAH; ISSN: 0022-3263

DT Journal

LA English

OS CASREACT 124:8482

AB Carbon-hydrogen insertion into remote, unactivated, prochiral C-H bonds of 3-aryl-1-Pr diazoacetates catalyzed by dirhodium(II) tetrakis[methyl 1-(3-phenylpropanoyl)imidazolidin-2-one-4(R or S)-carboxylate], Rh₂(4R-MPPIM)₄ or Rh₂(4S-MPPIM)₄, occurs in 91-94% ee and with virtually complete regiocontrol for formation of .beta.-benzyl-.gamma.-butyrolactones. This methodol. for catalytic asym. induction has been applied to the total syntheses of dibenzylbutyrolactone lignans (-)-enterolactone and (-)-hinokinin from substituted cinnamic acids in 23-27% overall yields. The x-ray structure of Rh₂(4S-MPPIM)₄ has been obtained, and its features suggest the causes of the extraordinary enantiocontrol elicited by this **catalyst** and its enantiomer.

=> d bib abs 111 7

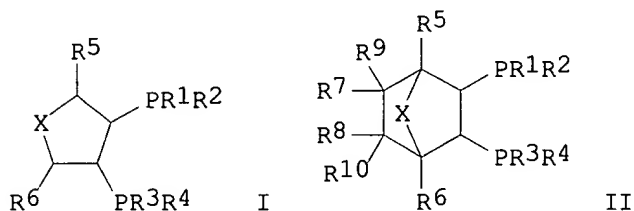
L11 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2002 ACS
 AN 1991:583072 HCAPLUS
 DN 115:183072
 TI Asymmetric hydrogenation of .alpha.-ketocarbonyl compounds to optically active .alpha.-hydroxycarbonyl compounds
 IN Schaefer, Adolf; Arntz, Dietrich
 PA Degussa A.-G., Fed. Rep. Ger.
 SO Ger. Offen., 12 pp.
 CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

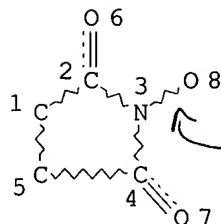
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4001019	A1	19910718	DE 1990-4001019	19900116
	EP 437690	A2	19910724	EP 1990-120856	19901031
	EP 437690	A3	19920520		
	EP 437690	B1	19941123		
	R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE				
	US 5177220	A	19930105	US 1991-639087	19910109
	JP 05140029	A2	19930608	JP 1991-2592	19910114
PRAI	DE 1990-4001019		19900116		
OS	CASREACT 115:183072; MARPAT 115:183072				
GI					



AB Asym. hydrogenation of .alpha.-ketocarbonyl compds. to produce optically active .alpha.-hydroxycarbonyl compds. in the presence of Rh or Ir **catalysts** and optically active 1,2-diphosphine ligands such as I, II (R1-R4, R5-R10 = C1-C8 alkyl, etc.; X = O, alkylamino, etc.), R1R2PCHR11CHR12PR3R4 (R11, R12 = C1-C6 alkyl, etc.), and dicarbonic acid **imide** in claimed. Thus, hydrogenation of .alpha.-ketopanto lactone in the presence of **catalyst** [IrLL1]BF4 [L = 1,5-cyclooctadiene, L1 = (3R,4R)-1-benzyl-3,4-bis(diphenylphosphino)pyrrolidine, (3R,4R)-bis(diphenylphosphino)pyrrolidine] and **cocatalyst succinimide** in PhMe gave higher optical yield of (R)-(-)-pantolactone.

=> d que 114
L1

STR



NODE ATTRIBUTES:
CONNECT IS E1 RC AT 8
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE

L3	423	SEA FILE=REGISTRY SSS FUL L1	← 423 cpds
L4	131	SEA FILE=HCAPLUS ABB=ON PLU=ON	L3/CAT 131 cites w/ imide catalyst
L5	499861	SEA FILE=HCAPLUS ABB=ON PLU=ON	?OLEFIN? OR ?ALKEN? OR ← olefin reactant
		?UNSATURATED?	
L8	803223	SEA FILE=HCAPLUS ABB=ON PLU=ON	OXYGEN(4A) (BEAR? OR CONTAIN?) ← alcohol or methine react
		OR ?ALCOHOL? OR ?ACETAL? OR ?METHIN? OR ?METHYN?	
L9	385240	SEA FILE=HCAPLUS ABB=ON PLU=ON	?DIHYDROXY? OR ?LACTON? OR ← products
		?HYDROXY?(2A)?ACETAL? OR CARBONYL? OR CONJUGATED(3A)L5	
L10	53	SEA FILE=HCAPLUS ABB=ON PLU=ON	L4 AND L8
L11	39	SEA FILE=HCAPLUS ABB=ON PLU=ON	L4 AND L9
L12	5	SEA FILE=HCAPLUS ABB=ON PLU=ON	L10 AND L11 AND L5
L13	3	SEA FILE=HCAPLUS ABB=ON PLU=ON	(2000:421066 OR 1998:760025) L13 are cites from applicant invention search
		OR 1999:431686)/AN	
L14	4	SEA FILE=HCAPLUS ABB=ON PLU=ON	L12 NOT L13

Strategy for search: assume that the imide catalyst is the point of novelty for all of the rxn's.

1. search catalyst STR
2. Find all HCAPLUS cites in which it is a catalyst
3. combine those cites with terms describing the reactants and products

L14 - 4 cites with all of the claim elements
- imide is catalyst
- disclose olefinic & OH or methine reactants
- cite discloses a claimed product

=> d hitstr ibib abs 1

L14 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2002 ACS

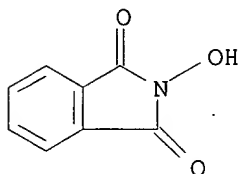
IT 524-38-9, N-Hydroxyphthalimide

RL: CAT (Catalyst use); USES (Uses)

(innovation of hydrocarbon oxidn. with mol. oxygen and related reactions)

RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 2001:601645 HCAPLUS

DOCUMENT NUMBER: 135:331301

TITLE: Innovation of hydrocarbon oxidation with molecular oxygen and related reactions

AUTHOR(S): Ishii, Yasutaka; Sakaguchi, Satoshi; Iwahama, Takahiro

CORPORATE SOURCE: Department of Applied Chemistry, Faculty of Engineering and High Technology Research Center, Kansai University, Suita, Osaka, 564-8680, Japan
SOURCE: Advanced Synthesis & Catalysis (2001), 343(5), 393-427
CODEN: ASCAF7; ISSN: 1615-4150

PUBLISHER: Wiley-VCH Verlag GmbH

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review with refs. An innovation of the aerobic oxidn. of hydrocarbons through catalytic carbon radical generation under mild conditions was achieved by using N-hydroxyphthalimide (NHPI) as a key compd. Alkanes were successfully oxidized with O or air to valuable **oxygen-contg.** compds. such as **alcs.**, ketones, and dicarboxylic acids by the combined catalytic system of NHPI and a transition metal such as Co or Mn. The NHPI-catalyzed oxidn. of alkylbenzenes with dioxygen could be performed even under normal temp. and pressure of dioxygen. Xylenes and methylpyridines were also converted into phthalic acids and pyridinecarboxylic acids, resp., in good yields. The present oxidn. method was extended to the selective transformations of **alcs.** to **carbonyl** compds. and of alkynes to ynones. The epoxidn. of **alkenes** using hydroperoxides or H₂O₂ generated in situ from hydrocarbons or **alcs.** and O₂ under the influence of the NHPI was demonstrated and seems to be a useful strategy for industrial applications. The NHPI method is applicable to a wide variety of org. syntheses via carbon radical intermediates. The catalytic carboxylation of alkanes was accomplished by the use of CO and O₂ in the presence of NHPI. In addn., the reactions of alkanes with NO, and SO₂ catalyzed by NHPI provided efficient methods for the synthesis of nitroalkanes and sulfonic acids, resp. A catalytic carbon-carbon bond forming reaction was achieved by allowing carbon radicals generated in situ from alkanes or **alcs.** to react with **alkenes** under mild conditions. A table of contents in this review includes: (1) Introduction: (2) Discovery of NHPI as Carbon Radical Producing Catalyst from Alkanes: (2.1) Historical Background: (2.2) Catalysis of NHPI in Aerobic Oxidn.: (3) NHPI-Catalyzed Aerobic Oxidn.: (3.1) Oxidn. of Benzylic Compds.: (3.2) Alkane Oxidns. with Mol. Oxygen: (3.3) Oxidn. of Alkylbenzenes: (3.4)

Practical Oxidn. of Methylpyridines: (3.5) Prepn. of Acetylenic Ketones via Alkyne Oxidn.: (3.6) Oxidn. of **Alcs.**: (3.7) Selective Oxidn. of Sulfides to Sulfoxides: (3.8) Prodn. of Hydrogen Peroxide by Aerobic Oxidn. of **Alcs.**: (3.9) Epoxidn. of **Alkenes** using Mol. Oxygen as Terminal Oxidant: (4) Carboxylation of Alkanes with CO and O₂: (5) Utilization of NO_x in Org. Synthesis: (5.1) First Catalytic Nitration of Alkanes using NO₂: (5.2) Reaction of NO₂ with Org. Compds.: (6) Sulfoxidn. of Alkanes Catalyzed by Vanadium: (7) Carbon-Carbon Bond Forming Reaction via Catalytic Carbon Radicals Generated from Various Org. Compds. Assisted by NHPI: (7.1) Oxyalkylation of **Alkenes** with Alkanes and Dioxygen: (7.2) Synthesis of .alpha.-Hydroxy-.gamma.-**lactones** by Addn. of .alpha.-Hydroxy Carbon Radicals to **Unsatd.** Esters: (7.3) Hydroxyacylation of **Alkenes** using 1,3-Dioxolanes and Dioxygen: (8) Conclusions.

REFERENCE COUNT: 394 THERE ARE 394 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

=> d hitstr ibib abs 2

L14 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2002 ACS

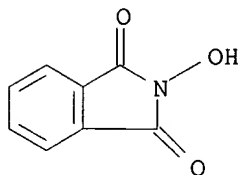
IT 524-38-9, N-Hydroxyphthalimide

RL: CAT (Catalyst use); USES (Uses)

(process for the prepn. of .beta.-acyloxy-carboxylic acids and acyloxyketones)

RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 2001:517641 HCAPLUS

DOCUMENT NUMBER: 135:92372

TITLE: Process for the preparation of .beta.-acyloxy-carboxylic acids and acyloxyketones

INVENTOR(S): Ishii, Yasutaka; Nakano, Tatsuya

PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001192354	A2	20010717	JP 2000-648	20000106

OTHER SOURCE(S): CASREACT 135:92372; MARPAT 135:92372

AB The title compds. R5COOC(R1)(R2)C(R3)(R4)COY [R1, R2 = H, org. substituent; further detail on R1 and R2 is given; R3, R4 = H, org. substituent; R5 = H, hydrocarbon, etc.; Y = OH, etc.], useful as intermediates for pharmaceuticals and agrochems., are prepd. by reaction of **alcs.** with .alpha.,.beta.-**unsatd. carbonyl** compds. in the presence of an imide catalyst and oxygen. Thus, a mixt. of Me vinyl ketone, 2-propanol, N-hydroxyphthalimide, cobalt (II) acetate, and cobalt (III) acetylacetonate in acetonitrile was stirred at 50.degree. under oxygen for 9 h to give 3-acetoxy-3-methylbutanoic acid in 40% yield.

=> d hitstr ibib abs 3

L14 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2002 ACS

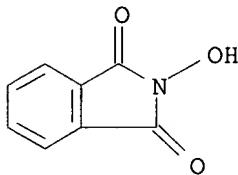
IT 524-38-9, N-Hydroxyphthalimide

RL: CAT (Catalyst use); USES (Uses)

(cooxidn. of org. compds. by oxygen to epoxy compds., esters, or
lactones in presence of imide)

RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1999:640799 HCAPLUS

DOCUMENT NUMBER: 131:243171

TITLE: Process for cooxidizing organic compounds, process for
producing epoxy compounds and process for producing
esters or lactones

INVENTOR(S): Ishii, Yasutaka; Nakano, Tatsuya

PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan

SOURCE: PCT Int. Appl., 68 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

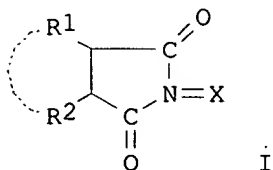
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9950204	A1	19991007	WO 1999-JP1464	19990323
W: JP, KR, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 990631	A1	20000405	EP 1999-909321	19990323
R: DE, FR, GB				
US 6229023	B1	20010508	US 1999-424315	19991122
PRIORITY APPLN. INFO.:			JP 1998-100459	A 19980327
			JP 1998-124215	A 19980416
			JP 1999-20325	A 19990128
			WO 1999-JP1464	W 19990323

OTHER SOURCE(S): CASREACT 131:243171; MARPAT 131:243171

GI



AB Disclosed is a process for cooxidizing org. compds. to epoxy compds., esters, or **lactones** which comprises, in the presence of an imide compd. (I; R1, R2 = H, halo, alkyl, aryl, cycloalkyl, ho, alkoxy, alkoxy carbonyl, acyl; or R1 and R2 are bonded together to form a bond or an arom. or nonarom. ring which is optionally bonded to 1 or 2 another N-substituted imides; X = O, OH) such as N-hydroxyphthalimide, oxidizing with mol. oxygen a compd. (A) which is selected from among (A1) compds. having nonarom. ethylenic linkage and (A2) ketones or **alcs**. corresponding to the ketones and a compd. (B) which can be oxidized by the above imide compd. with oxygen and is different from the above compd. (A). As the compd. (B), can be used (a) primary or secondary **alcs**. (benzhydrol, cyclohexanol, etc.), and (b) compds. having a carbon-hydrogen bond adjacent to an **unsatd.** bond (tetralin, ethylbenzene, etc.). Use of this process makes it possible to obtain the corresponding epoxy compds. from (A1) compds. having nonarom. ethylenic linkage, and the corresponding esters or **lactones** from (A2) ketones or **alcs**. corresponding to the ketones, each at a high yield. Cyclic or straight-chain epoxides, esters, or **lactones** are useful as intermediates for drugs, flavoring materials, dyes, or polymers. Thus, a mixt. of 2-octene 4, tetralin 20, N-hydroxyphthalimide 0.4, molybdenum hexacarbonyl 0.2, Co(OAc)2 0.004 mmol, 200 mg mol. sieve 4A, and 2 mL benzonitrile was stirred under oxygen atm. at 50.degree. for 20 h to give 72% 2,3-epoxyoctane, 21% .alpha.-tetralol, and 43% .alpha.-tetralone.

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d hitstr ibib abs 4

L14 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2002 ACS

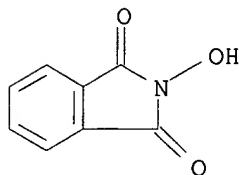
IT 524-38-9, N-Hydroxyphthalimide

RL: CAT (Catalyst use); USES (Uses)

(complexed catalytic system for oxidn. of hydrocarbons contg. metal compds. and)

RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1998:568609 HCAPLUS

DOCUMENT NUMBER: 129:190734

TITLE: Complexed catalytic system for oxidation of hydrocarbons and oxidation process

INVENTOR(S): Nakano, Tatsuya; Ishii, Yasutaka

PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan

SOURCE: Eur. Pat. Appl., 25 pp.

CODEN: EPXXDW

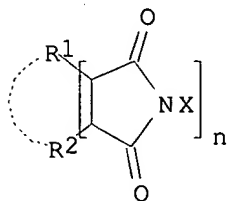
DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 858835	A1	19980819	EP 1998-102728	19980217
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 10286467	A2	19981027	JP 1997-353396	19971222
US 5981420	A	19991109	US 1998-24514	19980217
PRIORITY APPLN. INFO.:			JP 1997-32437	19970217
			JP 1997-353396	19971222
OTHER SOURCE(S):		MARPAT 129:190734		
GI				



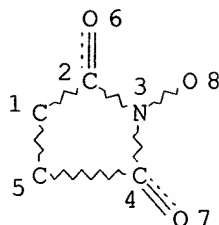
I

AB A substrate, e.g., a cycloalkane, a polycyclic hydrocarbon, an arom. compd. having a Me group, etc., is oxidized with O in the presence of an oxidn. catalytic system comprising an imide [I; R1, R2 = H, OH, halo, (cyclo)alkyl, alkoxy(carbonyl), carboxy, acyl, aryl; R1R2 =

double bond, (non)arom. ring; X = O, OH; n = 1-3], e.g., N-hydroxyphthalimide, and a cocatalyst contg. a Group 3-12 element, in particular Group 4-11 element, e.g., Ti, Cr, V, Cr, etc., (with a proviso). The catalytic system is useful for the manuf. of ketones, **alcs.**, aldehydes and carboxylic acids. For example, stirring a mixt. of cyclohexane 10, 1 mmol N-hydroxyphthalimide 1, Mn(acac)₃ 0.01, RuCl₃ 0.1 and Co(acac)₃ 0.01 mmol for 6 h at 100.degree. in 25 mL AcOH under O gave 76% adipic acid and 2% cyclohexanone with 90% cyclohexane conversion.

=> d que 116

L1 STR



NODE ATTRIBUTES:

CONNECT IS E1 RC AT 8
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE

L3 423 SEA FILE=REGISTRY SSS FUL L1
 L4 131 SEA FILE=HCAPLUS ABB=ON PLU=ON L3/CAT
 L5 499861 SEA FILE=HCAPLUS ABB=ON PLU=ON ?OLEFIN? OR ?ALKEN? OR
 ?UNSATURATED?
 L7 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L4 AND ?ALKYN?
 L8 803223 SEA FILE=HCAPLUS ABB=ON PLU=ON OXYGEN(4A) (BEAR? OR CONTAIN?)
 OR ?ALCOHOL? OR ?ACETAL? OR ?METHIN? OR ?METHYN?
 L9 385240 SEA FILE=HCAPLUS ABB=ON PLU=ON ?DIHYDROXY? OR ?LACTON? OR
 ?HYDROXY?(2A)?ACETAL? OR CARBONYL? OR CONJUGATED(3A)L5
 L10 53 SEA FILE=HCAPLUS ABB=ON PLU=ON L4 AND L8
 L11 39 SEA FILE=HCAPLUS ABB=ON PLU=ON L4 AND L9
 L12 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L10 AND L11 AND L5
 L15 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L7 AND (L8 OR L9)
 L16 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L15 NOT L12

L16 is the same search as
 L14 except that an
 alkyne (not an alkene) is
 the unsaturated rct.

I was looking for a 103

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L16 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2002 ACS

IT 524-38-9, N-Hydroxyphthalimide

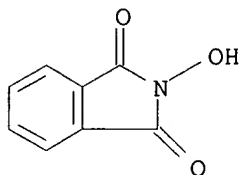
RL: CAT (Catalyst use); USES (Uses)

(prepn. of **carbonyl** compds. by catalytic radical addn. of**carbonyl** compds. to alkenes or **alkynes** using

manganese catalysts)

RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 2001:676732 HCAPLUS

DOCUMENT NUMBER: 135:242154

TITLE: Process for the preparation of organic compounds from **carbonyl** compounds and alkenes or **alkynes** by catalytic radical addition using manganese catalysts or the like

INVENTOR(S): Ishii, Yasutaka; Iwahama, Takahiro; Sakaguchi, Satoshi; Nakano, Tatsuya

PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan

SOURCE: PCT Int. Appl., 52 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001066501	A1	20010913	WO 2001-JP1813	20010308
W: JP, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
EP 1178031	A1	20020206	EP 2001-912189	20010308
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				

PRIORITY APPLN. INFO.: JP 2000-67679 A 20000310

WO 2001-JP1813 W 20010308

OTHER SOURCE(S): CASREACT 135:242154; MARPAT 135:242154

AB Disclosed is a process for the prepn. of compds. of the general formula $RbRcC(Y)C(Rd)(Re)C(Z)(Rf)Rg$ or $RbRcC(Y)C(Ri):C(Z)Rj$ (wherein Y is an electron-withdrawing group; Rb to Rj are each hydrogen or an org. group; and Z is hydrogen or hydroxyl, or alternatively, Y, Rb, and Rc; Rd to Rg; and/or Ri and Rj together with the carbon atom(s) adjacent thereto may form a ring.) which comprises reacting a compd. of the general formula $RbRcCHY$ having an electron-withdrawing group with an alkene or **alkyne** compd. of the general formula $RdReC:CRfRg$ or $RiC.tplbond.CRj$ in the presence of both a catalyst comprising a compd. contg. a member selected from among Group 5 to 9 elements of the periodic table and oxygen. According to this process, compds. having alkyl or alkenyl at the .alpha.-position to the electron-withdrawing group or

derivs. thereof can be efficiently prepd. from compds. having electron-withdrawing groups (e.g. ketones, cycloalkanones, .gamma.-**butyrolactone**, .epsilon.-**caprolactone**, malonic acid, malononitrile, and adipic acid) and olefins or acetylenes with high selectivity via catalytic radical addn. In particular, this process gives **carbonyl** compds. having alkyl or alkenyl attached to .alpha.-position of a **carbonyl** group from hydrocarbons having methylene group in one pot. Thus, a mix. of .epsilon.-**caprolactone** 20, 1-octene 2, Mn(OAc)₂ 0.02, Co(OAc)₂ 0.002 mmol, and 2 mL AcOH was stirred at 90.degree. for 3 h under a mixed gas atm. of N/O (9/1) (1 atm) to give 32% .alpha.-octyl-.epsilon.-**caprolactone**

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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L16 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2002 ACS

IT 524-38-9, N-Hydroxyphthalimide

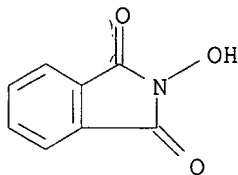
RL: CAT (Catalyst use); USES (Uses)

(prepn. of .alpha.,.beta.-acetylenic ketones by oxygenation of

alkynes using hydroxyphthalimide/transition metal catalyst)

RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME).



ACCESSION NUMBER: 1998:599089 HCAPLUS

DOCUMENT NUMBER: 129:343264

TITLE: Oxygenation of **alkynes** to
 .alpha.,.beta.-acetylenic ketones with dioxygen
 catalyzed by N-hydroxyphthalimide combined with a
 transition metal

AUTHOR(S): Sakaguchi, Satoshi; Takase, Tomoyuki; Iwahama,
 Takahiro; Ishii, Yasutaka

CORPORATE SOURCE: Faculty of Engineering and High Technology Research
 Center, Department of Applied Chemistry, Kansai
 University, Suita, Osaka, 564-8680, Japan

SOURCE: Chem. Commun. (Cambridge) (1998), (18), 2037-2038
 CODEN: CHCOFS; ISSN: 1359-7345

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 129:343264

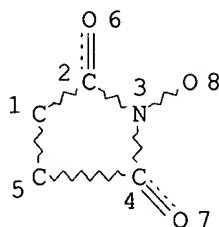
AB **Alkynes**, e.g., PrC.tplbond.CPr, were successfully converted into
 .alpha.,.beta.-acetylenic **carbonyl** compds., e.g.,
 EtCOC.tplbond.CPr, through radical-catalyzed aerobic oxidn. using
 N-hydroxyphthalimide combined with a transition metal under mild
 conditions.

SOLOLA 09/622,001

=> d que 121

L1

STR



NODE ATTRIBUTES:
 CONNECT IS E1 RC AT 8
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE

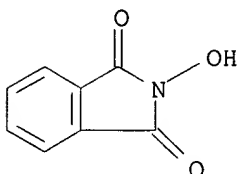
L3	423	SEA FILE=REGISTRY SSS FUL L1
L4	131	SEA FILE=HCAPLUS ABB=ON PLU=ON L3/CAT
L5	499861	SEA FILE=HCAPLUS ABB=ON PLU=ON ?OLEFIN? OR ?ALKEN? OR ?UNSATURATED?
L6	21	SEA FILE=HCAPLUS ABB=ON PLU=ON L4 AND L5
L7	3	SEA FILE=HCAPLUS ABB=ON PLU=ON L4 AND ?ALKYN?
L8	803223	SEA FILE=HCAPLUS ABB=ON PLU=ON OXYGEN(4A) (BEAR? OR CONTAIN?) OR ?ALCOHOL? OR ?ACETAL? OR ?METHIN? OR ?METHYN?
L9	385240	SEA FILE=HCAPLUS ABB=ON PLU=ON ?DIHYDROXY? OR ?LACTON? OR ?HYDROXY? (2A) ?ACETAL? OR CARBONYL? OR CONJUGATED(3A) L5
L10	53	SEA FILE=HCAPLUS ABB=ON PLU=ON L4 AND L8
L11	39	SEA FILE=HCAPLUS ABB=ON PLU=ON L4 AND L9
L12	5	SEA FILE=HCAPLUS ABB=ON PLU=ON L10 AND L11 AND L5
L15	3	SEA FILE=HCAPLUS ABB=ON PLU=ON L7 AND (L8 OR L9)
L16	2	SEA FILE=HCAPLUS ABB=ON PLU=ON L15 NOT L12
L17	76	SEA FILE=HCAPLUS ABB=ON PLU=ON L6 OR L10 OR L11
L18	71	SEA FILE=HCAPLUS ABB=ON PLU=ON L17 NOT L12
L19	69	SEA FILE=HCAPLUS ABB=ON PLU=ON L18 NOT L16
L20	32	SEA FILE=HCAPLUS ABB=ON PLU=ON L19 NOT PATENT/DT
L21	21	SEA FILE=HCAPLUS ABB=ON PLU=ON L20 AND PD<19991209

L21 consists of journal cites w/ a pub. date earlier than the priority date. L21 is derived from L17, L17 represents the cites that have only 2 or 3 elements required by the claims. L21 may be a 103,

cites # 9 & 14 of L21 looked promising, so I selected and displayed all of the cpds for #9 & #14 only - see the 2 paperclipped sections

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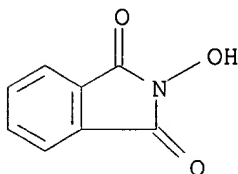
L21 ANSWER 1 OF 21 HCAPLUS COPYRIGHT 2002 ACS
 IT 524-38-9, N-Hydroxyphthalimide
 RL: CAT (Catalyst use); USES (Uses)
 (catalyst for cleavage of **dihydroxylated** fatty acids)
 RN 524-38-9 HCAPLUS
 CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 2000:7712 HCAPLUS
 DOCUMENT NUMBER: 132:153603
 TITLE: Practical **dihydroxylation** and C-C cleavage
 of **unsaturated** fatty acids
 AUTHOR(S): Oakley, M. A.; Woodward, S.; Coupland, K.; Parker, D.;
 Temple-Heald, C.
 CORPORATE SOURCE: Department of Chemistry, University of Hull,
 Kingston-upon-Hull, UK
 SOURCE: Journal of Molecular Catalysis A: Chemical (
 1999), 150(1-2), 105-111
 CODEN: JMCCF2; ISSN: 1381-1169
 PUBLISHER: Elsevier Science B.V.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB **Unsatd.** fatty acids, C₈H₁₇CH:CH(CH₂)_nCO₂H (n = 7, 11) were
 cleanly **dihydroxylated** using H₂O₂ in the presence of catalytic
 amts. of H₂WO₄. The diols were cleaved under O in the presence of
 catalytic amts. of N-hydroxyphthalimide and Co(acac)₃.
 REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d hitstr ibib abs 2

L21 ANSWER 2 OF 21 HCAPLUS COPYRIGHT 2002 ACS
 IT 524-38-9, N-Hydroxyphthalimide
 RL: CAT (Catalyst use); USES (Uses)
 (radical-catalyzed autoxidn. of alkanes)
 RN 524-38-9 HCAPLUS
 CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1999:367954 HCAPLUS
 DOCUMENT NUMBER: 131:144306
 TITLE: A new strategy for alkane oxidation with O₂ using N-hydroxyphthalimide (NHPI) as a radical catalyst
 AUTHOR(S): Ishii, Yasutaka; Sakaguchi, Satoshi
 CORPORATE SOURCE: Department of Applied Chemistry, Faculty of Engineering & High Technology Research Center, Kansai University, Suita, 564-8680, Japan
 SOURCE: Catalysis Surveys from Japan (1999), 3(1), 27-35
 CODEN: CSURFY; ISSN: 1384-6574
 PUBLISHER: Baltzer Science Publishers
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 131:144306
 AB A practical catalytic method to convert alkanes into the corresponding **oxygen-contg.** compds. with O₂ under mild conditions using N-hydroxyphthalimide (NHPI) in the presence or absence of a transition metal was developed. Thus, cyclohexane was successfully converted into adipic acid in good conversion and selectivity by a combined catalytic system consisting of NHPI and Mn(acac)₂. Lower alkanes such as isobutane were converted into t-Bu **alc.** (83%) under 10 atm of air by NHPI-Co(OAc)₂ system. Alkylbenzenes such as toluene were oxidized to benzoic acid in high yield (81%) under normal temp. and pressure of dioxygen in the presence of a catalytic amt. of NHPI and Co(OAc)₂. ESR measurements showed that phthalimide-N-oxyl generated from NHPI under dioxygen atm. is a key species in this oxidn. and functions as a radical catalyst.
 REFERENCE COUNT: 53 THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d hitstr ibib abs 3

L21 ANSWER 3 OF 21 HCAPLUS COPYRIGHT 2002 ACS

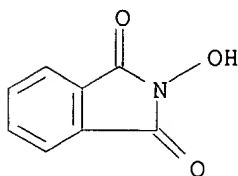
IT 524-38-9, N-Hydroxyphthalimide

RL: CAT (Catalyst use); USES (Uses)

(prepn. of aryl aldehydes and **acetals** by partial oxidn. of benzylic ethers with nitric oxide in the presence of hydroxyphthalimide)

RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1999:334455 HCAPLUS

DOCUMENT NUMBER: 131:129549

TITLE: A New Approach for Oxygenation Using Nitric Oxide under the Influence of N-Hydroxyphthalimide

AUTHOR(S): Eikawa, Masahiro; Sakaguchi, Satoshi; Ishii, Yasutaka

CORPORATE SOURCE: Department of Applied Chemistry Faculty of Engineering High Technology Research Center, Kansai University, Suita Osaka, 564-8680, Japan

SOURCE: Journal of Organic Chemistry (1999), 64(13), 4676-4679

CODEN: JOCEAH; ISSN: 0022-3263

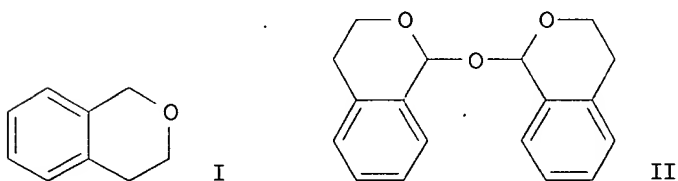
PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 131:129549

GI



AB An approach for partial oxygenation through a carbocation as an intermediate was successfully developed using nitric oxide under the influence of N-hydroxyphthalimide (NHPI). Thus, a variety of benzylic ethers were converted into the corresponding partially oxidized compds., which are difficult to prep. by conventional methods, in high yields. For example, the reaction of phthalan with NO in the presence of a catalytic amt. of NHPI at 60.degree. gave phthalaldehyde in 80% yield. The reaction proceeds through the formation of a **hemiacetal**, such as 1-phthalanol. Similarly, 1,3-di-tert-butoxymethylbenzene afforded

1,3-benzenedicarboxaldehyde in good yield. On the other hand, isochroman (I) was converted into 1,1'-oxybis[isochroman] (II) under these reaction conditions. The reaction of ethers with NO in the presence of NHPI proceeds via formation of a carbocation intermediate. This method provides a facile synthetic route to aldehydes or **acetals**.

REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d hitstr ibib abs 4

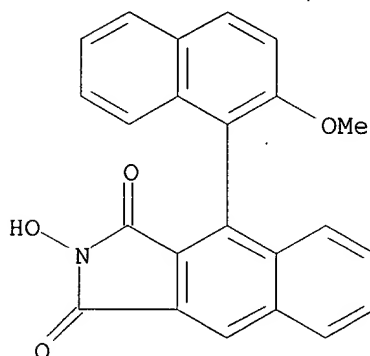
L21 ANSWER 4 OF 21 HCAPLUS COPYRIGHT 2002 ACS

IT 234450-92-1P 234450-93-2P

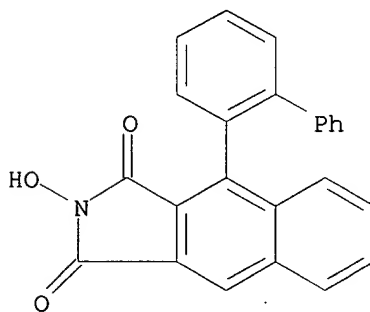
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP
(Preparation); USES (Uses)

(prepn. of axially chiral N-hydroxyimides as asym. oxidn. catalysts)

RN 234450-92-1 HCAPLUS

CN 1H-Benz[f]isoindole-1,3(2H)-dione, 2-hydroxy-4-(2-methoxy-1-naphthalenyl)-
, (+)- (9CI) (CA INDEX NAME)

RN 234450-93-2 HCAPLUS

CN 1H-Benz[f]isoindole-1,3(2H)-dione, 4-[1,1'-biphenyl]-2-yl-2-hydroxy-, (-)-
(9CI) (CA INDEX NAME)

ACCESSION NUMBER: 1999:304429 HCAPLUS

DOCUMENT NUMBER: 131:129540

TITLE: Synthesis of Axially Chiral N-Hydroxyimides, Potential
New Catalysts for Asymmetric OxidationsAUTHOR(S): Einhorn, Cathy; Einhorn, Jacques; Marcadal-Abadi,
Celine; Pierre, Jean-LouisCORPORATE SOURCE: Laboratoire de Chimie Biomimetique, Universite J.
Fourier, Grenoble, 38041, Fr.SOURCE: Journal of Organic Chemistry (1999), 64(12),
4542-4546

CODEN: JOCEAH; ISSN: 0022-3263

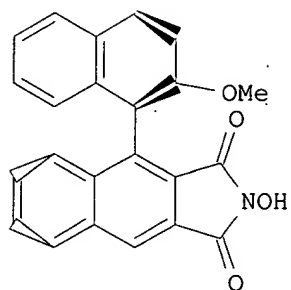
PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

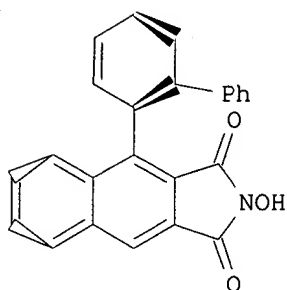
LANGUAGE: English

OTHER SOURCE(S):
GI

CASREACT 131:129540



I



II

AB Axially chiral N-hydroxyimides I and II were prepd. and used as catalysts in asym. oxidn. reactions. E.g., oxidn. of 2,2,4-triphenyl-1,3-dioxolane (III) in presence of II and CuCl as cocatalyst gave PhCOCH₂OH and Ph₂CO. The ee of the remaining III at half completion was 24%.

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d hitstr ibib abs 5

L21 ANSWER 5 OF 21 HCAPLUS COPYRIGHT 2002 ACS

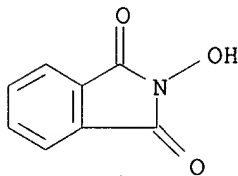
IT 524-38-9

RL: CAT (Catalyst use); USES (Uses)

(regio- and stereoselective epoxidn. of **alkenes** with dioxygen in presence of **alc.** catalyzed by N-hydroxyphthalimide and hexafluoroacetone)

RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1999:238137 HCAPLUS

DOCUMENT NUMBER: 130:337965

TITLE: Epoxidation of **alkenes** using dioxygen in the presence of an **alcohol** catalyzed by N-hydroxyphthalimide and hexafluoroacetone without any metal catalystAUTHOR(S): Iwahama, Takahiro; Sakaguchi, Satoshi; Ishii, Yasutaka
CORPORATE SOURCE: Faculty of Engineering + High Technology Research Center, Department of Applied Chemistry, Kansai University, Suita, Osaka, Japan

SOURCE: Chem. Commun. (Cambridge) (1999), (8), 727-728

CODEN: CHCOFS; ISSN: 1359-7345

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

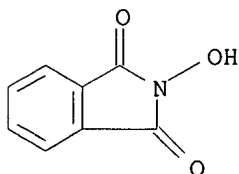
OTHER SOURCE(S): CASREACT 130:337965

AB A new approach for the epoxidn. of **alkenes**, e.g., 2-octene, using O₂ without any metal catalyst was developed; a variety of **alkenes** were epoxidized in a regio- and stereoselective manner with O₂ in the presence of benzhydrol catalyzed by N-hydroxyphthalimide and hexafluoroacetone.

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d hitstr ibib abs 6

L21 ANSWER 6 OF 21 HCAPLUS COPYRIGHT 2002 ACS
 IT 524-38-9, N-Hydroxyphthalimide
 RL: **CAT (Catalyst use)**; USES (Uses)
 (aerobic oxidn. using N-hydroxyphthalimide as catalyst)
 RN 524-38-9 HCAPLUS
 CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1999:56721 HCAPLUS
 DOCUMENT NUMBER: 130:138866
 TITLE: Development of novel aerobic oxidation method using
 N-hydroxyphthalimide as catalyst
 AUTHOR(S): Ishii, Yasutaka; Sakaguchi, Satoshi; Iwahama, Takahiro
 CORPORATE SOURCE: Fac. Eng., Kansai Univ., Suita, 564-8680, Japan
 SOURCE: Yuki Gosei Kagaku Kyokaishi (1999), 57(1),
 24-34
 CODEN: YGKKAE; ISSN: 0037-9980
 PUBLISHER: Yuki Gosei Kagaku Kyokai
 DOCUMENT TYPE: Journal; General Review
 LANGUAGE: Japanese
 AB A review with 44 refs. on novel methods for the oxidn. of alkanes with
 mol. O using a radical catalyst, N-hydroxyphthalimide (NHPI). A variety
 of alkanes such as cyclohexane, adamantane, and toluene are converted into
 the corresponding **alcs.** and/or **carbonyl** compds. in
 high yields. The application of the same methodol. to adamantane with
 CO/air leads to adamantanecarboxylic acid through radical
carbonylation in fair yield. The reaction of benzyl ethers with
 NO in the presence of NHPI affords the corresponding aldehydes in good
 yields. The present method provides a new class of aerobic oxidn., i.e.
 radical-catalyzed autoxidn.

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L21 ANSWER 7 OF 21 HCAPLUS COPYRIGHT 2002 ACS

IT 524-38-9, N-Hydroxyphthalimide

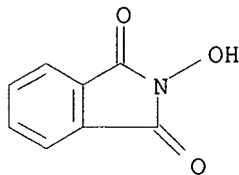
RL: CAT (Catalyst use); USES (Uses)

(oxidn. of sulfides to sulfoxides with mol. oxygen catalyzed by

N-hydroxyphthalimide in presence of **alcs.**)

RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1998:757866 HCAPLUS

DOCUMENT NUMBER: 130:95345

TITLE: Selective oxidation of sulfides to sulfoxides with molecular oxygen catalyzed by N-hydroxyphthalimide (NHPI) in the presence of **alcohols**

AUTHOR(S): Iwahama, Takahiro; Sakaguchi, Satoshi; Ishii, Yasutaka

CORPORATE SOURCE: Department of Applied Chemistry, Faculty of Engineering & High Technology Research Center, Kansai University, Suita, 564-8680, Japan

SOURCE: Tetrahedron Lett. (1998), 39(49), 9059-9062

CODEN: TELEAY; ISSN: 0040-4039

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 130:95345

AB Aerobic oxidn. of various sulfides using N-hydroxyphthalimide (NHPI) in the presence of **alcs.** was examd. For instance, the oxidn. of di-Ph sulfide in the presence of cyclohexanol and a catalytic amt. of NHPI in benzonitrile gave di-Ph sulfoxide in 88% yield along with a small amt. of di-Ph sulfone (7%). The actual oxidant in this oxidn. is considered to be an .alpha.-hydroxy hydroperoxide generated by the autoxidn. of the **alc.**, assisted by the NHPI, which serves as the radical catalyst.

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d hitstr ibib abs 8

L21 ANSWER 8 OF 21 HCAPLUS COPYRIGHT 2002 ACS

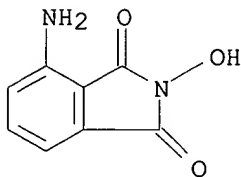
IT 212557-14-7

RL: **CAT (Catalyst use)**; USES (Uses)

(oxidn. of alkylbenzenes and **alkenylbenzenes** with
laccase-hydroxyimide mediator)

RN 212557-14-7 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 4-amino-2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1998:714383 HCAPLUS

DOCUMENT NUMBER: 130:95348

TITLE: Laccase-mediator system for the synthesis of aldehydes and ketones

AUTHOR(S): Fritz-Langhals, E.; Kunath, B.

CORPORATE SOURCE: Consortium fur Elektrochemische Industrie GmbH,
Central Research Company of Wacker-Chemie GmbH,
Munchen, D-81379, Germany

SOURCE: Meded. - Fac. Landbouwk. Toegepaste Biol. Wet. (Univ.
Gent) (1998), 63(4a), 1373-1376
CODEN: MFLBER; ISSN: 1373-7503

PUBLISHER: Universiteit Gent, Faculteit Landbouwkundige en
Toegepaste Biologische Wetenschappen

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Arom. aldehydes and ketones can be prepd. in aq. medium by oxidn. of the
corresponding Me arom. compds. using the enzyme laccase and catalytic
amts. of various N-hydroxy compds. in the presence of oxygen. Allylic
alcs. gave the corresponding aldehydes in good yield, whereas
propenylbenzenes undergo exclusively oxidn. at the double bond.

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d hitstr ibib abs 9

L21 ANSWER 9 OF 21 HCAPLUS COPYRIGHT 2002 ACS

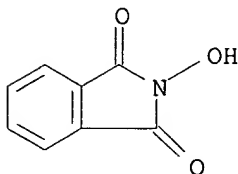
IT 524-38-9, N-Hydroxyphthalimide

RL: CAT (Catalyst use); PRP (Properties); USES (Uses)

(electrocatalyst for oxidn. of borneol and cyclohexanol and octanol)

RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



IT 13719-85-2 85342-65-0 105969-98-0

173962-58-8 214754-50-4 214754-53-7

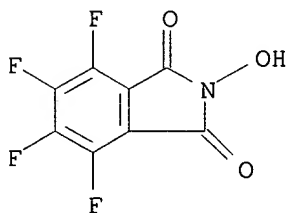
214754-55-9 214754-56-0 214754-57-1

RL: CAT (Catalyst use); PRP (Properties); USES (Uses)

(electrocatalysts for oxidn. of alcs.)

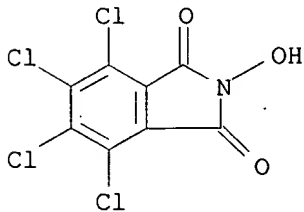
RN 13719-85-2 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 4,5,6,7-tetrafluoro-2-hydroxy- (9CI) (CA INDEX NAME)



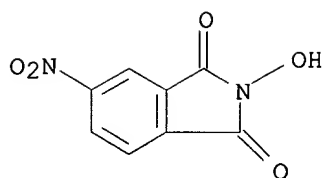
RN 85342-65-0 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 4,5,6,7-tetrachloro-2-hydroxy- (9CI) (CA INDEX NAME)

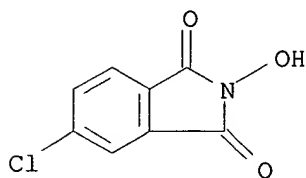


RN 105969-98-0 HCAPLUS

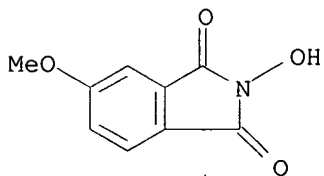
CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy-5-nitro- (9CI) (CA INDEX NAME)



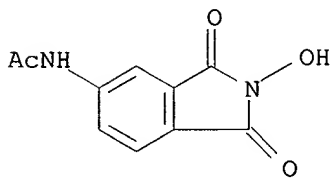
RN 173962-58-8 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, 5-chloro-2-hydroxy- (9CI) (CA INDEX NAME)



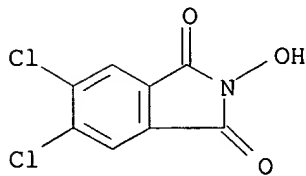
RN 214754-50-4 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy-5-methoxy- (9CI) (CA INDEX NAME)



RN 214754-53-7 HCAPLUS
CN Acetamide, N-(2,3-dihydro-2-hydroxy-1,3-dioxo-1H-isoindol-5-yl)- (9CI)
(CA INDEX NAME)



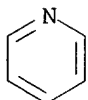
RN 214754-55-9 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, 5,6-dichloro-2-hydroxy- (9CI) (CA INDEX NAME)



RN 214754-56-0 HCAPLUS
CN 1H-Isoindole-5-carboxylic acid, 2,3-dihydro-2-hydroxy-1,3-dioxo-, methyl

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L21 ANSWER 9 OF 21 HCAPLUS COPYRIGHT 2002 ACS
 T1 Electrocatalytic oxidation of **alcohols** using substituted
 N-hydroxyphthalimides as catalysts
 IT 29611-84-5, Collidine
 RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
 (cyclic voltammetry of hydroxyphthalimides in acetonitrile with and
 without collidine: electrocatalytic oxidn. of **alcs.** using
 substituted hydroxyphthalimides as catalysts)
 RN 29611-84-5 HCAPLUS
 CN Pyridine, trimethyl- (8CI, 9CI) (CA INDEX NAME)

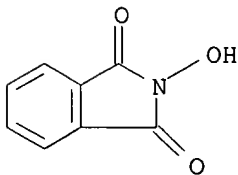


3 (D1-Me)

IT 7440-44-0, Carbon, uses
 RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (cyclic voltammetry of hydroxyphthalimides on carbon disk in
 acetonitrile with and without collidine: electrocatalytic oxidn. of
alcs. using substituted hydroxyphthalimides as catalysts)
 RN 7440-44-0 HCAPLUS
 CN Carbon (7CI, 8CI, 9CI) (CA INDEX NAME)

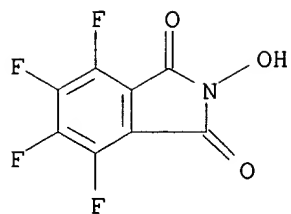
C

IT 524-38-9, N-Hydroxyphthalimide
 RL: CAT (Catalyst use); PRP (Properties); USES (Uses)
 (electrocatalyst for oxidn. of borneol and cyclohexanol and octanol)
 RN 524-38-9 HCAPLUS
 CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)

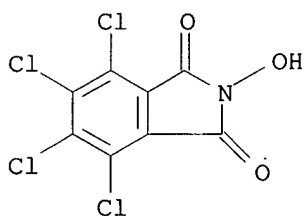


IT 13719-85-2 85342-65-0 105969-98-0
 173962-58-8 214754-50-4 214754-53-7
 214754-55-9 214754-56-0 214754-57-1
 RL: CAT (Catalyst use); PRP (Properties); USES (Uses)
 (electrocatalysts for oxidn. of **alcs.**)
 RN 13719-85-2 HCAPLUS
 CN 1H-Isoindole-1,3(2H)-dione, 4,5,6,7-tetrafluoro-2-hydroxy- (9CI) (CA
 INDEX NAME)

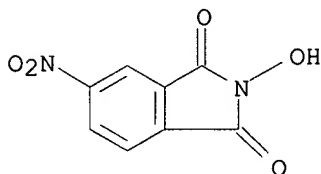
#9/21



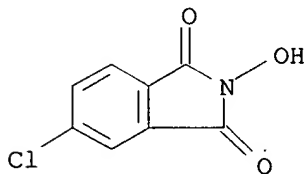
RN 85342-65-0 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, 4,5,6,7-tetrachloro-2-hydroxy- (9CI) (CA INDEX NAME)



RN 105969-98-0 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy-5-nitro- (9CI) (CA INDEX NAME)

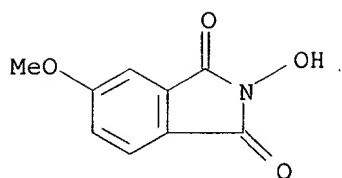


RN 173962-58-8 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, 5-chloro-2-hydroxy- (9CI) (CA INDEX NAME)

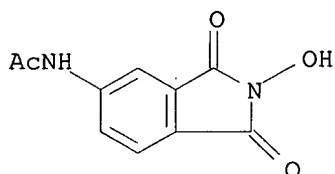


RN 214754-50-4 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy-5-methoxy- (9CI) (CA INDEX NAME)

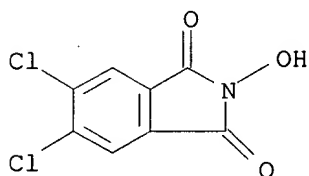
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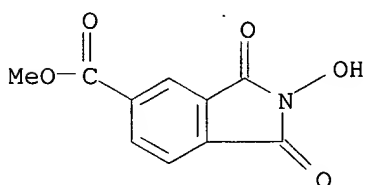
RN 214754-53-7 HCAPLUS
 CN Acetamide, N-(2,3-dihydro-2-hydroxy-1,3-dioxo-1H-isoindol-5-yl)- (9CI)
 (CA INDEX NAME)



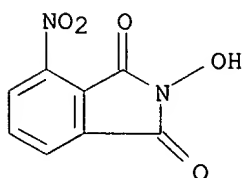
RN 214754-55-9 HCAPLUS
 CN 1H-Isoindole-1,3(2H)-dione, 5,6-dichloro-2-hydroxy- (9CI) (CA INDEX NAME)



RN 214754-56-0 HCAPLUS
 CN 1H-Isoindole-5-carboxylic acid, 2,3-dihydro-2-hydroxy-1,3-dioxo-, methyl ester (9CI) (CA INDEX NAME)

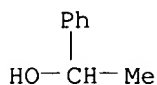


RN 214754-57-1 HCAPLUS
 CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy-4-nitro- (9CI) (CA INDEX NAME)

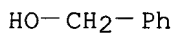


9/21

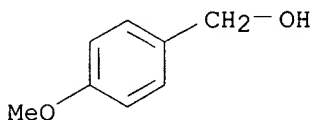
IT 98-85-1, sec-Phenethyl alcohol 100-51-6,
 Benzyl alcohol, properties 105-13-5, 4-Methoxybenzyl
 alcohol 108-93-0, Cyclohexanol, properties
 111-87-5, 1-Octanol, properties 123-96-6, 2-Octanol
 507-70-0, Borneol
 RL: PRP (Properties); RCT (Reactant)
 (electrocatalytic oxidn. of **alcs.** using substituted
 hydroxyphthalimides as catalysts)
 RN 98-85-1 HCAPLUS
 CN Benzenemethanol, .alpha.-methyl- (9CI) (CA INDEX NAME)



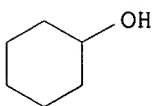
RN 100-51-6 HCAPLUS
 CN Benzenemethanol (9CI) (CA INDEX NAME)



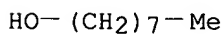
RN 105-13-5 HCAPLUS
 CN Benzenemethanol, 4-methoxy- (9CI) (CA INDEX NAME)



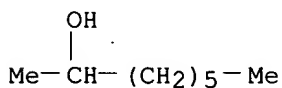
RN 108-93-0 HCAPLUS
 CN Cyclohexanol (8CI, 9CI) (CA INDEX NAME)



RN 111-87-5 HCAPLUS
 CN 1-Octanol (9CI) (CA INDEX NAME)



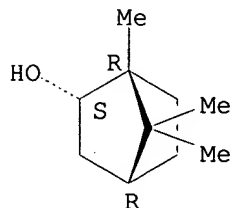
RN 123-96-6 HCAPLUS
 CN 2-Octanol (8CI, 9CI) (CA INDEX NAME)



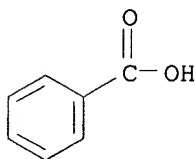
9/21

RN 507-70-0 HCAPLUS
CN Bicyclo[2.2.1]heptan-2-ol, 1,7,7-trimethyl-, (1R,2S,4R)-rel- (9CI) (CA INDEX NAME)

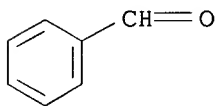
Relative stereochemistry.



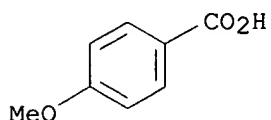
IT 65-85-0P, Benzoic acid, properties 100-52-7P,
Benzaldehyde, properties
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. in electrocatalytic oxidn. of benzyl alc. using
substituted hydroxyphthalimides as catalysts)
RN 65-85-0 HCAPLUS
CN Benzoic acid (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 100-52-7 HCAPLUS
CN Benzaldehyde (7CI, 8CI, 9CI) (CA INDEX NAME)

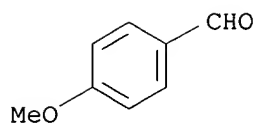


IT 100-09-4P 123-11-5P, properties
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. in electrocatalytic oxidn. of methoxybenzyl alc.
using substituted hydroxyphthalimides as catalysts)
RN 100-09-4 HCAPLUS
CN Benzoic acid, 4-methoxy- (9CI) (CA INDEX NAME)

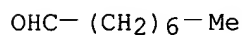


RN 123-11-5 HCAPLUS
CN Benzaldehyde, 4-methoxy- (9CI) (CA INDEX NAME)

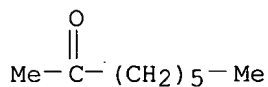
9/21



IT 124-13-0P, n-Octanal
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (prepn. in electrocatalytic oxidn. of octanol using substituted
 hydroxyphthalimides as catalysts)
 RN 124-13-0 HCAPLUS
 CN Octanal (8CI, 9CI) (CA INDEX NAME)

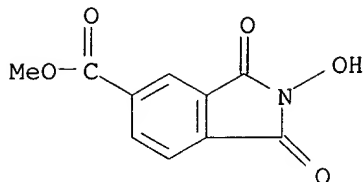


IT 111-13-7P, 2-Octanone
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. in electrocatalytic oxidn. of octanol using substituted
 hydroxyphthalimides as catalysts)
 RN 111-13-7 HCAPLUS
 CN 2-Octanone (8CI, 9CI) (CA INDEX NAME)



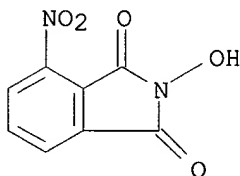
9/21

ester (9CI) (CA INDEX NAME)



RN 214754-57-1 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy-4-nitro- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1998:628473 HCAPLUS

DOCUMENT NUMBER: 129:322639

TITLE: Electrocatalytic oxidation of **alcohols** using substituted N-hydroxyphthalimides as catalysts

AUTHOR(S): Gorgy, Karine; Lepretre, Jean-Claude; Saint-Aman, Eric; Einhorn, Cathy; Einhorn, Jacques; Marcadal, Celine; Pierre, Jean-Louis

CORPORATE SOURCE: Laboratoire d'Electrochimie Organique et de Photochimie Redox, UMR CNRS 5630, Universite Joseph Fourier Grenoble I, Grenoble, 38041, Fr.

SOURCE: Electrochim. Acta (1998), 44(2-3), 385-393

CODEN: ELCAAV; ISSN: 0013-4686

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The electrocatalytic oxidn. of several **alcs.** was performed using substituted N-hydroxyphthalimides as catalysts. The substitution in the N-hydroxyphthalimide structure by electron withdrawing or donor substituents has a beneficial effect on the efficiency of the electrocatalytic oxidn. of borneol, used as a model, although the progressive degrdn. of the catalysts during preparative electrolyses is obsd. In the case of lowest activated **alcs.** such as 2-octanol the use of the regular structure allows the best chem. yield in the corresponding **carbonyl** compds. to be obtained. Also, primary **alc.** oxidn. under anaerobic conditions leads to the corresponding aldehyde exclusively, whereas in the presence of mol. oxygen a mixt. of the corresponding aldehyde and carboxylic acid was obtained.

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L21 ANSWER 10 OF 21 HCAPLUS COPYRIGHT 2002 ACS

IT 524-38-9, N-Hydroxyphthalimide 173962-59-9

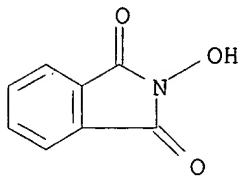
212557-14-7 212557-15-8 212557-16-9

RL: CAT (Catalyst use); USES (Uses)

(prepn. of arom. aldehydes by laccase-mediator assisted oxidn. of arom. hydrocarbons)

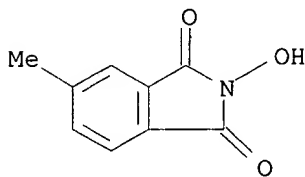
RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



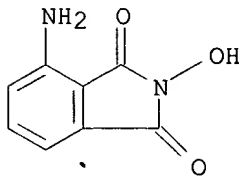
RN 173962-59-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy-5-methyl- (9CI) (CA INDEX NAME)



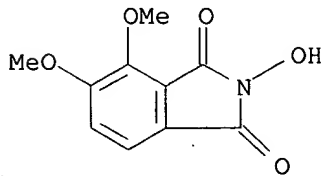
RN 212557-14-7 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 4-amino-2-hydroxy- (9CI) (CA INDEX NAME)



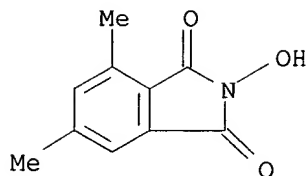
RN 212557-15-8 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy-4,5-dimethoxy- (9CI) (CA INDEX NAME)



RN 212557-16-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy-4,6-dimethyl- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1998:513175 HCAPLUS
 DOCUMENT NUMBER: 129:216386
 TITLE: Synthesis of aromatic aldehydes by laccase-mediator assisted oxidation
 AUTHOR(S): Fritz-Langhals, Elke; Kunath, Brigitte
 CORPORATE SOURCE: Consortium fur Elektrochemische Industrie GmbH, Central Research Company of Wacker-Chemie GmbH, Munchen, D-81379, Germany
 SOURCE: Tetrahedron Lett. (1998), 39(33), 5955-5956
 CODEN: TELEAY; ISSN: 0040-4039
 PUBLISHER: Elsevier Science Ltd.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 129:216386
 AB Arom. aldehydes can be prepd. in aq. medium by oxidn. of the corresponding Me arom. compds. in the presence of oxygen, the enzyme laccase, and catalytic amts. of various N-hydroxy compds. Allylic **alcs.** also gave the corresponding aldehydes in good yield. Competing reactions reveal that the N-hydroxy compd. is involved in the rate detg. step of the reaction.

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L21 ANSWER 11 OF 21 HCAPLUS COPYRIGHT 2002 ACS

IT 524-38-9, N-Hydroxyphthalimide

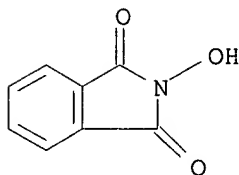
RL: CAT (Catalyst use); USES (Uses)

(aerobic oxidn. of isobutane to tert-Bu alc. catalyzed by

N-hydroxyphthalimide and Co(II))

RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1998:342747 HCAPLUS

DOCUMENT NUMBER: 129:81499

TITLE: An efficient aerobic oxidation of isobutane to t'-butyl
 alcohol by N-hydroxyphthalimide combined with
 Co(II) species

AUTHOR(S): Sakaguchi, Satoshi; Kato, Susumu; Iwahama, Takahiro;
 Ishii, Yasutaka

CORPORATE SOURCE: Faculty Engineering High Technology Research Center,
 Kansai University, Suita, 564-8680, Japan

SOURCE: Bull. Chem. Soc. Jpn. (1998), 71(5),
 1237-1240

CODEN: BCSJA8; ISSN: 0009-2673

PUBLISHER: Chemical Society of Japan

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 129:81499

AB Highly selective aerobic oxidn. of isobutane to t-Bu alc. was
 successfully achieved by the use of a radical catalyst,
 N-hydroxyphthalimide (NHPI), in the presence of Co(II) salt under
 relatively mild conditions. The oxidn. of isobutane by NHPI combined with
 Co(acac)₂ under a pressure of air (10 atm) in benzonitrile at 100.degree.C
 gave t-Bu alc. in high yield (84%) along with acetone (13%).
 The reaction is thought to proceed via hydrogen abstraction from isobutane
 by the phthalimidooxyl radical (PINO), which seems to be a key active
 species. The formation of acetone can be explained by a partial
 .beta.-scission of the t-butoxy radical, generated from the redox decompn.
 of t-Bu hydroperoxide by cobalt ion. Alkyl-substituted butanes and
 pentanes were difficult to be oxidized selectively under these conditions
 because of easy degrdn. to smaller fragments of the resulting alkoxyl
 radical intermediates.

=> d hitstr ibib abs 12

L21 ANSWER 12 OF 21 HCAPLUS COPYRIGHT 2002 ACS

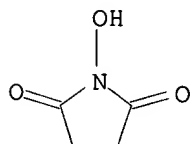
IT 6066-82-6, N-Hydroxysuccinimide

RL: CAT (Catalyst use); USES (Uses)

(oxidn. of syringyl dimers with nitrogen dioxide to dimethoxybenzoquinone in relation to prepn. of pulping catalysts from lignin)

RN 6066-82-6 HCAPLUS

CN 2,5-Pyrrolidinedione, 1-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1997:793086 HCAPLUS

DOCUMENT NUMBER: 128:49599

TITLE: Pulping catalysts from lignin: progress and barriers to an economic synthesis

AUTHOR(S): Dimmel, Donald R.; Pan, Xiaoqi; Bozell, Joseph J.

CORPORATE SOURCE: Institute of Paper Science and Technology, Atlanta, GA, 30318, USA

SOURCE: Int. Symp. Wood. Pulping Chem., 8th (1995), Volume 3, 301-306. Gummerus Kirjapaino Oy: Jyvaskyla, Finland.

CODEN: 65KDAY

DOCUMENT TYPE: Conference

LANGUAGE: English

AB Oxidn. of a lignin model disyringyl dimer with nitrogen dioxide (NO₂) in the presence of air and N-hydroxysuccinimide (NHS) led to C1-C.alpha. cleavage with the formation of approx. equal amts. of 2,6-dimethoxy-p-benzoquinone (DMBQ) and glyceraldehyde-2-syringyl ether type structures. The result indicates that only the phenolic end syringyl units of a lignin polymer will be converted to DMBQ upon treatment with the current NO₂ reaction conditions. Internal (nonphenolic) lignin units, bonded by .beta.-O-4 linkages, will resist oxidization. The study is of interest with respect to prepn. of low-cost. anthraquinone pulping catalyst from lignin.

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L21 ANSWER 13 OF 21 HCAPLUS COPYRIGHT 2002 ACS

IT 524-38-9, N-Hydroxyphthalimide

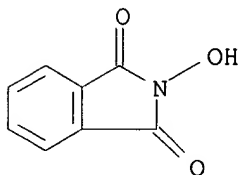
RL: **CAT (Catalyst use)**; USES (Uses)

(oxidn. of org. substrates by mol. oxygen mediated by N-

hydroxyphthalimide and **acetaldehyde** (Erratum))

RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER:

1997:275739 HCAPLUS

DOCUMENT NUMBER:

126:343144

TITLE:

Oxidation of organic substrates by molecular oxygen mediated by N-**hydroxyphthalimide** (NHPI) and **acetaldehyde**. [Erratum to document cited in CA126:250781]

AUTHOR(S):

Einhorn, Cathy; Einhorn, Jacques; Marcadal, Celine; Pierre, Jean-Louis

CORPORATE SOURCE:

Lab. Chim. Biomimet., Univ. J. Fourier, Grenoble, 28041, Fr.

SOURCE:

Chem. Commun. (Cambridge) (1997), (7), 726

CODEN: CHCOFS; ISSN: 1359-7345

PUBLISHER:

Royal Society of Chemistry

DOCUMENT TYPE:

Journal

LANGUAGE:

English

AB Table 1 is cor.

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L21 ANSWER 14 OF 21 HCAPLUS COPYRIGHT 2002 ACS

IT 524-38-9, N-Hydroxyphthalimide

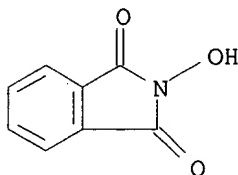
RL: **CAT (Catalyst use)**; USES (Uses)

(oxidn. of org. substrates by mol. oxygen mediated by N-

hydroxyphthalimide and **acetaldehyde**)

RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER:

1997:196033 HCAPLUS

DOCUMENT NUMBER:

126:250781

TITLE:

Oxidation of organic substrates by molecular oxygen mediated by N-**hydroxyphthalimide** (NHPI) and **acetaldehyde**

AUTHOR(S):

Einhorn, Cathy; Einhorn, Jacques; Marcadal, Celine; Pierre, Jean-Louis

CORPORATE SOURCE:

Lab. Chim. Biomimet., Univ. J. Fourier, Grenoble, 38041, Fr.

SOURCE:

Chem. Commun. (Cambridge) (1997), (5), 447-448

PUBLISHER:

CODEN: CHCOFS; ISSN: 1359-7345

DOCUMENT TYPE:

Royal Society of Chemistry

LANGUAGE:

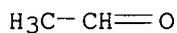
Journal

English

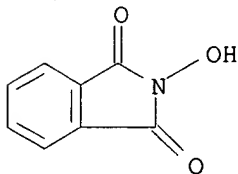
AB Various org. substrates, in particular hydrocarbons, are efficiently oxidized under mild conditions using mol. oxygen, N-**hydroxyphthalimide** and **acetaldehyde** in the absence of metal catalysts.

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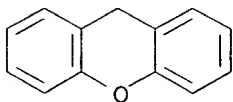
L21 ANSWER 14 OF 21 HCAPLUS COPYRIGHT 2002 ACS
 TI Oxidation of organic substrates by molecular oxygen mediated by N-
hydroxyphthalimide (NHPI) and **acetaldehyde**
 IT 75-07-0, **Acetaldehyde**, uses 524-38-9,
 N-Hydroxyphthalimide
 RL: **CAT (Catalyst use)**; USES (Uses)
 (oxidn. of org. substrates by mol. oxygen mediated by N-
hydroxyphthalimide and **acetaldehyde**)
 RN 75-07-0 HCAPLUS
 CN Acetaldehyde (8CI, 9CI) (CA INDEX NAME)



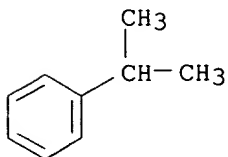
RN 524-38-9 HCAPLUS
 CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



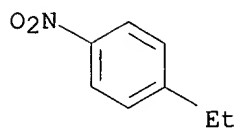
IT 92-83-1, Xanthene 98-82-8, Cumene 100-12-9,
 p-Ethylnitrobenzene 100-41-4, Ethylbenzene, reactions
 101-81-5, Diphenylmethane 110-82-7, Cyclohexane,
 reactions 281-23-2, Adamantane 493-05-0, Isochroman
 496-11-7, Indan 1515-95-3, p-Ethylanisole
 RL: RCT (Reactant)
 (oxidn. of org. substrates by mol. oxygen mediated by N-
hydroxyphthalimide and **acetaldehyde**)
 RN 92-83-1 HCAPLUS
 CN 9H-Xanthene (9CI) (CA INDEX NAME)



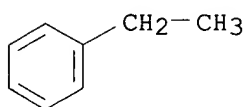
RN 98-82-8 HCAPLUS
 CN Benzene, (1-methylethyl)- (9CI) (CA INDEX NAME)



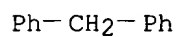
RN 100-12-9 HCAPLUS
CN Benzene, 1-ethyl-4-nitro- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 100-41-4 HCAPLUS
CN Benzene, ethyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



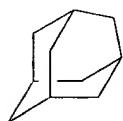
RN 101-81-5 HCAPLUS
CN Benzene, 1,1'-methylenebis- (9CI) (CA INDEX NAME)



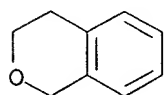
RN 110-82-7 HCAPLUS
CN Cyclohexane (8CI, 9CI) (CA INDEX NAME)



RN 281-23-2 HCAPLUS
CN Tricyclo[3.3.1.1^{3,7}]decane (9CI) (CA INDEX NAME)



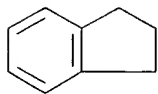
RN 493-05-0 HCAPLUS
CN 1H-2-Benzopyran, 3,4-dihydro- (9CI) (CA INDEX NAME)



RN 496-11-7 HCAPLUS

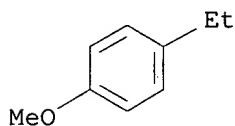
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CN 1H-Indene, 2,3-dihydro- (9CI) (CA INDEX NAME)



RN 1515-95-3 HCAPLUS

CN Benzene, 1-ethyl-4-methoxy- (9CI) (CA INDEX NAME)

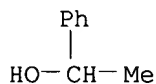


IT 98-85-1P, 1-Phenylethanol

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(oxidn. of org. substrates by mol. oxygen mediated by N-
hydroxyphthalimide and **acetaldehyde**)

RN 98-85-1 HCAPLUS

CN Benzenemethanol, .alpha.-methyl- (9CI) (CA INDEX NAME)

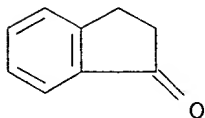


IT 83-33-0P, 1-Indanone 90-47-1P, Xanthone 91-01-0P
, Diphenylmethanol 98-86-2P, Acetophenone, preparation
100-06-1P 100-19-6P 108-93-0P, Cyclohexanol,
preparation 108-94-1P, Cyclohexanone, preparation
119-61-9P, Benzophenone, preparation 617-94-7P,
2-Phenyl-2-propanol 700-58-3P, Adamantanone 768-95-6P,
1-Adamantanol 3319-15-1P, 1-(4-Methoxyphenyl)ethanol
4702-34-5P, 1-Isochromanone 6351-10-6P, 1-Indanol
6531-13-1P, 1-(4-Nitrophenyl)ethanol

RL: SPN (Synthetic preparation); PREP (Preparation)
(oxidn. of org. substrates by mol. oxygen mediated by N-
hydroxyphthalimide and **acetaldehyde**)

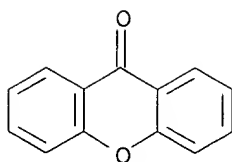
RN 83-33-0 HCAPLUS

CN 1H-Inden-1-one, 2,3-dihydro- (9CI) (CA INDEX NAME)

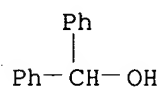


RN 90-47-1 HCAPLUS

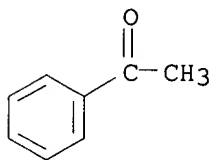
CN 9H-Xanthen-9-one (9CI) (CA INDEX NAME)



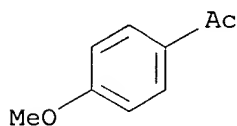
RN 91-01-0 HCAPLUS
CN Benzenemethanol, .alpha.-phenyl- (9CI) (CA INDEX NAME)



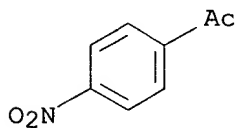
RN 98-86-2 HCAPLUS
CN Ethanone, 1-phenyl- (9CI) (CA INDEX NAME)



RN 100-06-1 HCAPLUS
CN Ethanone, 1-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)

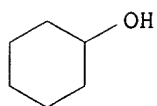


RN 100-19-6 HCAPLUS
CN Ethanone, 1-(4-nitrophenyl)- (9CI) (CA INDEX NAME)

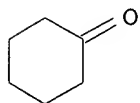


RN 108-93-0 HCAPLUS
CN Cyclohexanol (8CI, 9CI) (CA INDEX NAME)

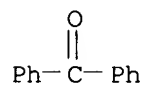
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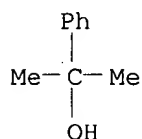
RN 108-94-1 HCAPLUS
CN Cyclohexanone (7CI, 8CI, 9CI) (CA INDEX NAME)



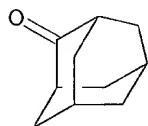
RN 119-61-9 HCAPLUS
CN Methanone, diphenyl- (9CI) (CA INDEX NAME)



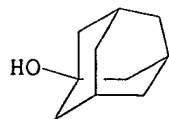
RN 617-94-7 HCAPLUS
CN Benzenemethanol, .alpha.,.alpha.-dimethyl- (9CI) (CA INDEX NAME)



RN 700-58-3 HCAPLUS
CN Tricyclo[3.3.1.1.3,7]decanone (9CI) (CA INDEX NAME)

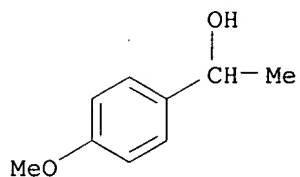


RN 768-95-6 HCAPLUS
CN Tricyclo[3.3.1.1.3,7]decan-1-ol (9CI) (CA INDEX NAME)



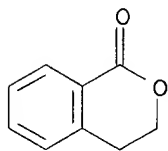
RN 3319-15-1 HCAPLUS

CN Benzenemethanol, 4-methoxy-.alpha.-methyl- (9CI) (CA INDEX NAME)



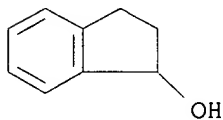
RN 4702-34-5 HCAPLUS

CN 1H-2-Benzopyran-1-one, 3,4-dihydro- (9CI) (CA INDEX NAME)



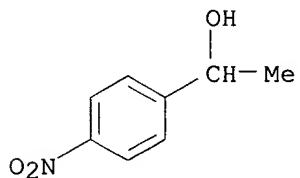
RN 6351-10-6 HCAPLUS

CN 1H-Inden-1-ol, 2,3-dihydro- (9CI) (CA INDEX NAME)



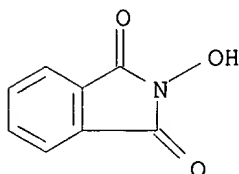
RN 6531-13-1 HCAPLUS

CN Benzenemethanol, .alpha.-methyl-4-nitro- (9CI) (CA INDEX NAME)



=> d hitstr ibib abs 15

L21 ANSWER 15 OF 21 HCAPLUS COPYRIGHT 2002 ACS
 IT 524-38-9, N-Hydroxyphthalimide
 RL: CAT (Catalyst use); USES (Uses)
 (N-hydroxyphthalimide-Co(acac)_n oxidn. catalysts for org. substrates)
 RN 524-38-9 HCAPLUS
 CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1997:138263 HCAPLUS
 DOCUMENT NUMBER: 126:237962
 TITLE: A novel catalysis of N-hydroxyphthalimide (NHPI) combined with Co(acac)_n (n = 2 or 3) in the oxidation of organic substrates with molecular oxygen
 AUTHOR(S): Ishii, Yasutaka
 CORPORATE SOURCE: Department of Applied Chemistry, Kansai University, Suita, Osaka, 564, Japan
 SOURCE: J. Mol. Catal. A: Chem. (1997), 117(1-3, Proceedings of the 6th International Symposium on the Activation of Dioxygen and Homogeneous Catalytic Oxidation, 1996), 123-137
 CODEN: JMCCF2; ISSN: 1381-1169
 PUBLISHER: Elsevier
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB A novel class of catalysts for aerobic oxidn. for a wide variety of org. substrates was developed. Benzylic compds. such as fluorene were oxidized with mol. oxygen in the presence of N-hydroxyphthalimide (NHPI) to give the corresponding oxygenated products such as fluorenone. For the oxidn. of cycloalkanes, polycyclic alkanes and alkylbenzenes, which are difficult to be oxidized by NHPI alone, a combined catalytic system of NHPI with Co(acac)_n (n = 2 or 3) was found to be efficient for the oxidn. of these substrates. Thus cycloalkanes were successfully oxidized with dioxygen in the presence of a catalytic amt. of NHPI (10 mol) and Co(acac)₂ (0.5 mol) in acetic acid at 100.degree.C to give cycloalkanones and dicarboxylic acids as principal products. Alkylbenzenes were also oxidized by this catalytic system to form the corresponding carboxylic acids and/or **carbonyl** compds. in good yields. Exposure of NHPI to atm. oxygen in benzonitrile at 80.degree.C generated phthalimide N-oxyl (PINO), a key intermediate, in this oxidn. The formation of PINO from the NHPI and dioxygen was significantly accelerated by adding Co(acac)₂ to the reaction system.

=> d hitstr ibib abs 16

L21 ANSWER 16 OF 21 HCAPLUS COPYRIGHT 2002 ACS

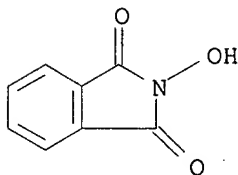
IT 524-38-9, N-Hydroxyphthalimide

RL: CAT (Catalyst use); USES (Uses)

(hydroxylation of polycyclic alkanes using N-hydroxyphthalimide-transition metal catalyst)

RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1996:436581 HCAPLUS

DOCUMENT NUMBER: 125:221232

TITLE: Hydroxylation of polycyclic alkanes with molecular oxygen catalyzed by N-hydroxyphthalimide (NHPI) combined with transition metal salts

AUTHOR(S): Ishii, Yasutaka; Kato, Susumu; Iwahama, Takahiro; Sakaguchi, Satoshi

CORPORATE SOURCE: Dep. Appl. Chem., Fac. Eng., Kansai Univ., Suita, 564, Japan

SOURCE: Tetrahedron Lett. (1996), 37(28), 4993-4996

CODEN: TELEAY; ISSN: 0040-4039

DOCUMENT TYPE: Journal

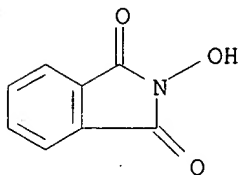
LANGUAGE: English

OTHER SOURCE(S): CASREACT 125:221232

AB Adamantanes were successfully converted into the corresponding mono- and dihydroxy adamantanes with mol. oxygen in the presence of N-hydroxyphthalimide (NHPI) combined with cobalt salts under mild conditions. For example, exposure of adamantane under oxygen atm. in the presence of NHPI (10 mol %) and Co(acac)₂ (0.5 mol %) in acetic acid at 75.degree. for 6 h afforded adamantane-1-ol (43%) and adamantane-1,3-diol (40%) along with adamantane-2-one (8%) in 93% conversion. Similarly, 1,3-dimethyladamantane produced 3,5-dimethyladamantane-1-ol (47%) and 5,7-dimethyladamantane-1,3-diol (37%).

=> d hitstr ibib abs 17

L21 ANSWER 17 OF 21 HCAPLUS COPYRIGHT 2002 ACS
 IT 524-38-9, N-Hydroxyphthalimide
 RL: CAT (Catalyst use); USES (Uses)
 (aerobic oxidn. of **alcs.** to **carbonyl** compds.
 catalyzed by N-hydroxyphthalimide (NHPI) combined with Co(acac)₃)
 RN 524-38-9 HCAPLUS
 CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1995:818002 HCAPLUS
 DOCUMENT NUMBER: 124:55076
 TITLE: Aerobic oxidation of **alcohols** to **carbonyl** compounds catalyzed by N-hydroxyphthalimide (NHPI) combined with Co(acac)₃
 AUTHOR(S): Iwahama, Takahiro; Sakaguchi, Satoshi; Nishiyama, Yutaka; Ishii, Yasutaka
 CORPORATE SOURCE: Dep. Appl. Chem., Kansai Univ., Suita, 564, Japan
 SOURCE: Tetrahedron Lett. (1995), 36(38), 6923-6
 CODEN: TELEAY; ISSN: 0040-4039
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 124:55076
 AB Aerobic oxidn. of various **alcs.** has been accomplished by using a new catalytic system, N-hydroxyphthalimide (NHPI) combined with Co(acac)₃. The oxidn. of **alcs.** by NHPI was found to be markedly enhanced by adding a slight amt. of Co(acac)₃ (0.05 equiv. to NHPI). Thus, secondary **alcs.** and vic-diols which are difficult to be oxidized by NHPI alone were smoothly oxidized with mol. oxygen (1 atm) to the corresponding **carbonyl** compds. under relatively mild conditions (65-75.degree.C).

=> d hitstr ibib abs 18

L21 ANSWER 18 OF 21 HCAPLUS COPYRIGHT 2002 ACS

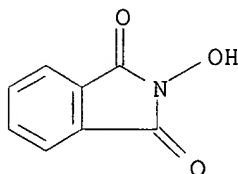
IT 524-38-9, N-Hydroxyphthalimide

RL: CAT (Catalyst use); USES (Uses)

(catalyst for oxidn. of org. compds.)

RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1995:629833 HCAPLUS

DOCUMENT NUMBER: 123:8951

TITLE: Novel Catalysis by N-Hydroxyphthalimide in the Oxidation of Organic Substrates by Molecular Oxygen

AUTHOR(S): Ishii, Yasutaka; Nakayama, Kouichi; Takeno, Mitsuhiro; Sakaguchi, Satoshi; Iwahama, Takahiro; Nishiyama, Yutaka

CORPORATE SOURCE: Faculty of Engineering, Kansai University, Suita, 564, Japan

SOURCE: J. Org. Chem. (1995), 60(13), 3934-5

CODEN: JOCEAH; ISSN: 0022-3263

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 123:8951

AB N-Hydroxyphthalimide catalyzed the oxidn. of several benzylic substrates and various **alcs.** by O₂ in PhCN soln. at 100.degree.. Thus, fluorene was oxidized to fluoren-9-one in 80% yield. Evidence for a mechanism similar to that of a free-radical autoxidn. was presented.

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L21 ANSWER 19 OF 21 HCAPLUS COPYRIGHT 2002 ACS

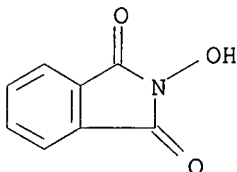
IT 524-38-9, N-Hydroxyphthalimide

RL: CAT (Catalyst use); USES (Uses)

(catalysts, for electrochem. oxidn. of amides or lactams)

RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1987:66593 HCAPLUS

DOCUMENT NUMBER: 106:66593

TITLE: Anodic oxidation of amides and lactams using N-hydroxyphthalimide as a mediator

AUTHOR(S): Masui, Masaichiro; Hara, Seijiro; Ozaki, Shigeko

CORPORATE SOURCE: Fac. Pharm. Sci., Osaka Univ., Suita, 565, Japan

SOURCE: Chem. Pharm. Bull. (1986), 34(3), 975-9

CODEN: CPBTAL; ISSN: 0009-2363

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 106:66593

AB Indirect electrochem. oxidn. of amides and N-alkyllactams was performed using N-hydroxyphthalimide as a mediator. A **carbonyl** group was introduced in good yield at the .alpha.-carbon to the N of the compds. The mechanism involved peroxy radical intermediates.

=> d hitstr ibib abs 20

L21 ANSWER 20 OF 21 HCAPLUS COPYRIGHT 2002 ACS

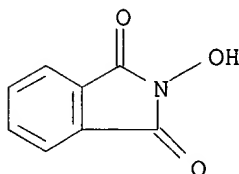
IT 524-38-9 6066-82-6

RL: CAT (Catalyst use); USES (Uses)

(catalysts, for addn. reaction of di-Et azodicarboxylate with ethers)

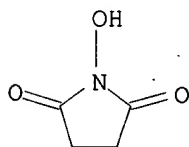
RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



RN 6066-82-6 HCAPLUS

CN 2,5-Pyrrolidinedione, 1-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1978:6274 HCAPLUS

DOCUMENT NUMBER: 88:6274

TITLE: Reaction of diethyl azodicarboxylate with ethers in the presence of N-hydroxyimides as catalysts

AUTHOR(S): Grochowski, Edward; Boleslawska, Teresa; Jurczak, Janusz

CORPORATE SOURCE: Inst. Org. Chem., Pol. Acad. Sci., Warsaw, Pol.

SOURCE: Synthesis (1977), (10), 718-20

CODEN: SYNTBF

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Treating (EtO₂CN:)₂ with RCH₂OR₁ [RR₁ = (CH₂)₃, CH₂OCH₂CH₂, O(CH₂)₃; R = Pr, R₁ = Bu; R = Me, R₁ = Et; R = Ph, R₁ = PhCH₂] at 70-120.degree. for 0.5-12 h in the presence of N-hydroxyphthalimide or -succinimide gave RCH(OR₁)N(CO₂Et)NHCO₂Et (I) in 94-7% yield. A free-radical mechanism is proposed. I (R = Pr, R₁ = Bu) on hydrolysis gave PrCHO, BuOH, and (EtO₂CNH)₂.

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L21 ANSWER 21 OF 21 HCAPLUS COPYRIGHT 2002 ACS

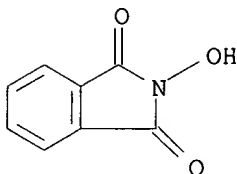
IT 524-38-9 6066-82-6

RL: CAT (Catalyst use); USES (Uses)

(catalysts, for acylation of polymeric benzylamines with polymer-bound esters)

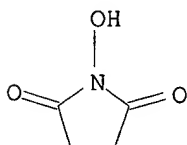
RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



RN 6066-82-6 HCAPLUS

CN 2,5-Pyrrolidinedione, 1-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1975:85686 HCAPLUS

DOCUMENT NUMBER: 82:85686

TITLE: Three-phase test for reaction intermediates.

Nucleophilic catalysis and elimination reactions

AUTHOR(S): Rebek, Julius; Brown, David; Zimmerman, Stephen

CORPORATE SOURCE: Dep. Chem., Univ. California, Los Angeles, Calif., USA

SOURCE: J. Am. Chem. Soc. (1975), 97(2), 454-5

CODEN: JACSAT

DOCUMENT TYPE: Journal

LANGUAGE: English

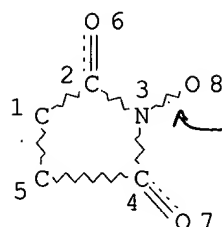
AB A new method for the detection of reaction intermediates involves the generation of an intermediate from an insoluble, polymeric precursor and its detection by trapping on another solid phase suspended in the same soln. The method is used to detect nucleophilic catalysis of acyl transfer reactions and intermediates in ElcB.

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L1

STR



DBond or SB

NODE ATTRIBUTES:

CONNECT IS E1 RC AT 8

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE

L3 423 SEA FILE=REGISTRY SSS FUL L1
 L4 131 SEA FILE=HCAPLUS ABB=ON PLU=ON L3/CAT
 L5 499861 SEA FILE=HCAPLUS ABB=ON PLU=ON ?OLEFIN? OR ?ALKEN? OR
 ?UNSATURATED?
 L6 21 SEA FILE=HCAPLUS ABB=ON PLU=ON L4 AND L5
 L7 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L4 AND ?ALKYN?
 L8 803223 SEA FILE=HCAPLUS ABB=ON PLU=ON OXYGEN(4A) (BEAR? OR CONTAIN?)
 OR ?ALCOHOL? OR ?ACETAL? OR ?METHIN? OR ?METHYN?
 L9 385240 SEA FILE=HCAPLUS ABB=ON PLU=ON ?DIHYDROXY? OR ?LACTON? OR
 ?HYDROXY?(2A) ?ACETAL? OR CARBONYL? OR CONJUGATED(3A) L5
 L10 53 SEA FILE=HCAPLUS ABB=ON PLU=ON L4 AND L8
 L11 39 SEA FILE=HCAPLUS ABB=ON PLU=ON L4 AND L9
 L12 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L10 AND L11 AND L5
 L15 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L7 AND (L8 OR L9)
 L16 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L15 NOT L12
 L17 76 SEA FILE=HCAPLUS ABB=ON PLU=ON L6 OR L10 OR L11
 L18 71 SEA FILE=HCAPLUS ABB=ON PLU=ON L17 NOT L12
 L19 69 SEA FILE=HCAPLUS ABB=ON PLU=ON L18 NOT L16
 L20 32 SEA FILE=HCAPLUS ABB=ON PLU=ON L19 NOT PATENT/DT
 L26 37 SEA FILE=HCAPLUS ABB=ON PLU=ON L19 NOT L20
 L27 15 SEA FILE=HCAPLUS ABB=ON PLU=ON L26 AND PRD<19991209
 L28 15 SEA FILE=HCAPLUS ABB=ON PLU=ON L27 AND (L5 OR L8 OR L9)

L21 consists of patent cites with
 a priority date earlier than the
 instant application priority date.
 Like L21, it is derived from
 L17 & has only 2 or 3 required
 elements of the 1st claim.

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L28 ANSWER 1 OF 15 HCAPLUS COPYRIGHT 2002 ACS

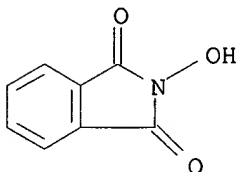
IT 524-38-9, N-Hydroxyphthalimide

RL: CAT (Catalyst use); USES (Uses)

(process for prepn. of nitro compds. by nitration of org. substrates
with nitrogen dioxide in presence of oxygen and method for removal of
nitrogen dioxide)

RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 2000:824205 HCAPLUS

DOCUMENT NUMBER: 134:4527

TITLE: Process for the preparation of nitro compounds and method for the removal of nitrogen dioxide

INVENTOR(S): Ishii, Yasutaka; Nakano, Tatsuya

PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan

SOURCE: PCT Int. Appl., 35 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000069803	A1	20001123	WO 2000-JP3112	20000516 <--
W: CN, ID, KR, SG, US				
RW: DE, FR, GB				
JP 2000327635	A2	20001128	JP 1999-136339	19990517
EP 1099684	A1	20010516	EP 2000-927772	20000516 <--
R: DE, FR, GB				

PRIORITY APPLN. INFO.: JP 1999-136339 A 19990517 <--
WO 2000-JP3112 W 20000516

OTHER SOURCE(S): CASREACT 134:4527; MARPAT 134:4527

AB Described is a process for the prepn. of nitro compds. by reacting an org. substrate with nitrogen dioxide either in the presence of oxygen or under such conditions that the nitrogen dioxide/org. substrate ratio is less than 1 by mole. The reaction may be conducted in the presence of an imide compd. such as N-hydroxyphthalimide and the org. substrate includes (a) aliph. hydrocarbons, (b) alicyclic hydrocarbons, (c) nonarom. heterocyclic compds. having ring-constituent carbon atoms bonded to hydrogen atoms, (d) compds. bearing arom. rings and carbon-hydrogen bonds adjacent to the rings, (e) **carbonyl** compds. bearing carbon-hydrogen bonds adjacent to the **carbonyl** groups, and so on. Nitrogen dioxide (g) is efficiently removed to prevent air pollution by nitrogen dioxide using an app. in which nitrogen dioxide is removed by contacting gas contg. nitrogen dioxide with org. substrates in the presence of oxygen. This process enables nonarom. heterocyclic compds. efficient nitration of org. substrates even under relatively mild conditions. Thus, 5 mL cyclohexane, 0.6 mmol N-hydroxyphthalimide, and 0.1 mL nitrogen dioxide were stirred

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under air (1 atm) at 70.degree. for 14 h to give 75% nitrocyclohexane and
11% cyclohexyl nitrate.

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d hitstr ibib abs 2

L28 ANSWER 2 OF 15 HCAPLUS COPYRIGHT 2002 ACS

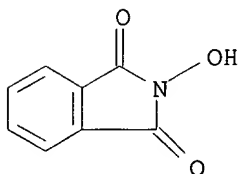
IT 524-38-9, N-Hydroxyphthalimide 4814-74-8,
N-Hydroxymaleimide 5426-10-8, N-Hydroxyhexahydrophthalimide
6066-82-6, N-Hydroxysuccinimide 21715-90-2
57583-53-6, N,N'-Dihydroxypyromellitimide
85342-65-0, N-Hydroxytetrachlorophthalimide 110167-77-6
142109-85-1 213274-94-3 216392-96-0

RL: CAT (Catalyst use); USES (Uses)

(manuf. of cycloalkanones in high yield by oxidn. of cycloalkanes in
presence of Co compds. and N-(oxo or hydroxy)imides)

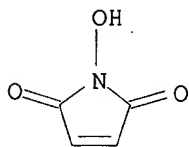
RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



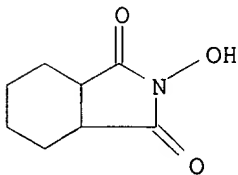
RN 4814-74-8 HCAPLUS

CN 1H-Pyrrole-2,5-dione, 1-hydroxy- (9CI) (CA INDEX NAME)



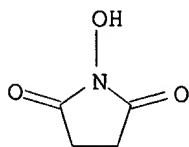
RN 5426-10-8 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, hexahydro-2-hydroxy- (9CI) (CA INDEX NAME)



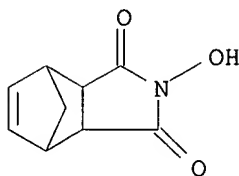
RN 6066-82-6 HCAPLUS

CN 2,5-Pyrrolidinedione, 1-hydroxy- (9CI) (CA INDEX NAME)

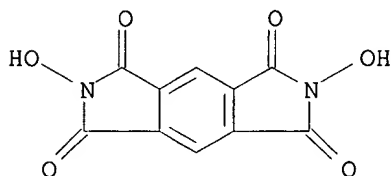


RN 21715-90-2 HCAPLUS

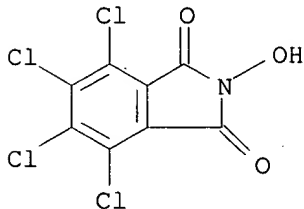
CN 4,7-Methano-1H-isoindole-1,3(2H)-dione, 3a,4,7,7a-tetrahydro-2-hydroxy- (9CI) (CA INDEX NAME)



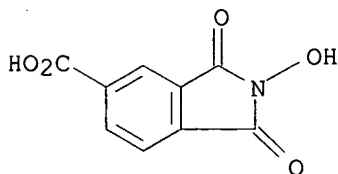
RN 57583-53-6 HCAPLUS
CN Benzo[1,2-c:4,5-c']dipyrrole-1,3,5,7(2H,6H)-tetrone, 2,6-dihydroxy- (9CI) (CA INDEX NAME)



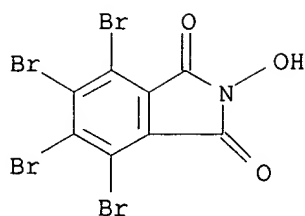
RN 85342-65-0 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, 4,5,6,7-tetrachloro-2-hydroxy- (9CI) (CA INDEX NAME)



RN 110167-77-6 HCAPLUS
CN 1H-Isoindole-5-carboxylic acid, 2,3-dihydro-2-hydroxy-1,3-dioxo- (9CI) (CA INDEX NAME)

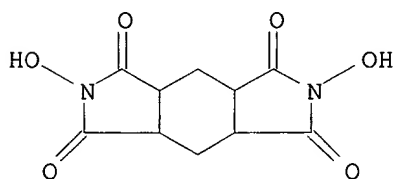


RN 142109-85-1 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, 4,5,6,7-tetrabromo-2-hydroxy- (9CI) (CA INDEX NAME)



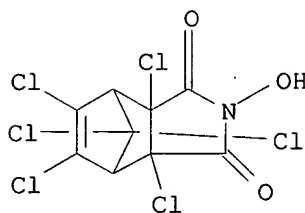
RN 213274-94-3 HCAPLUS

CN Benzo[1,2-c:4,5-c']dipyrrole-1,3,5,7(2H,6H)-tetrone, hexahydro-2,6-dihydroxy- (9CI) (CA INDEX NAME)



RN 216392-96-0 HCAPLUS

CN 4,7-Methano-1H-isoindole-1,3(2H)-dione, 3a,5,6,7a,8,8-hexachloro-3a,4,7,7a-tetrahydro-2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 2000:592678 HCAPLUS
 DOCUMENT NUMBER: 133:194954
 TITLE: Manufacture of cycloalkanone in high yields
 INVENTOR(S): Miura, Hiroyuki; Watanabe, Hitoshi; Ina, Tomohide;
 Nakajima, Hidehiko
 PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan
 SOURCE: PCT Int. Appl., 47 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000048975	A1	20000824	WO 2000-JP690	20000208 <--
W: CN, ID, IN, KR, SG, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
JP 2000239211	A2	20000905	JP 1999-42106	19990219
EP 1074537	A1	20010207	EP 2000-902151	20000208 <--

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, FI

PRIORITY APPLN. INFO.:

JP 1999-42106 A 19990219 <--
WO 2000-JP690 W 20000208

AB The cycloalkanones (e.g., cyclohexanone useful for caprolactam prepn.) are prepd. in high efficiency without dehydrogenation process by contacting cycloalkanes with mol. O in the presence of oxidn. catalysts contg. N-(oxo or hydroxy)imide units, sepg. the catalysts and by-produced acid (deriv.) components from the reaction mixts. (by a filter, an extn. column, a hydrolyzing and a sapon. app.), and sepg. cycloalkanes, cycloalkanols, and cycloalkanones from the reaction mixts. (by several distn. columns). A 99% pure cyclohexanone (I; with purifn. efficiency of 91%) was obtained by contacting 840 g/H cyclohexane (II) with 1.3-Nm³/H air in the presence of a mixt. of II 103, N-hydroxyphthalimide 160, and Co acetylacetonate 64 g/H at 160.degree. and 40 atm. for 4 h (to achieve a I selectivity of 89%) and sepg. steps as described above. The above catalysts could be easily recycled. Detailed illustrations are presented.

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d hitstr ibib abs 3

L28 ANSWER 3 OF 15 HCAPLUS COPYRIGHT 2002 ACS

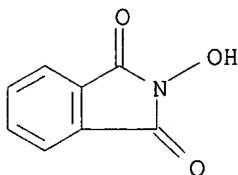
IT 524-38-9, N-Hydroxyphthalimide

RL: CAT (Catalyst use); USES (Uses)

(catalyst; manuf. of org. oxidn. reaction products by mol. oxygen oxidn. and by using imide catalysts)

RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 2000:592676 HCAPLUS

DOCUMENT NUMBER: 133:179298

TITLE: Manufacture of organic oxidation reaction products by the molecular oxygen oxidation and by using imide catalysts

INVENTOR(S): Miura, Hiroyuki; Watanabe, Hitoshi; Ina, Tomohide; Nakajima, Hidehiko

PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan

SOURCE: PCT Int. Appl., 28 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000048972	A1	20000824	WO 2000-JP689	20000208 <--
W: CN, ID, IN, KR, SG, US, VN				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
JP 2000239200	A2	20000905	JP 1999-42104	19990219
EP 1074536	A1	20010207	EP 2000-902150	20000208 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
PRIORITY APPLN. INFO.:			JP 1999-42104	A 19990219 <--
			WO 2000-JP689	W 20000208

OTHER SOURCE(S): MARPAT 133:179298

AB The manuf. giving products with good yield and high purity under mild conditions is processed by oxidizing a substrate, e.g., a hydrocarbon, an alc., an aldehyde or a ketone, with mol. O in the presence of an imide compd. (A), e.g., N-hydroxyphthalimide (I), alone as the oxidn. catalyst or its mixt. with a Group 3-11 or Group 13 transition metal compd. as cocatalyst, wherein the moisture content in the system is controlled to <200 mol/mol-A for reducing the byproduct formation and catalyst poisoning. Thus, a mixt. of 840 g cyclohexane (II; moisture content 0.042 g), 160 g I (moisture content 5 g) and 10,000 g acetonitrile (moisture content 45 g) having I:H₂O mol. ratio of 1:2.8 was heated at 75.degree. under an O pressure of 20 atm for 10 h to give cyclohexanone with purity 99% and II conversion rate of 56%.

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REFERENCE COUNT:

8

THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d hitstr ibib abs 4

L28 ANSWER 4 OF 15 HCAPLUS COPYRIGHT 2002 ACS

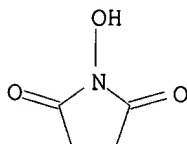
IT 6066-82-6, N-Hydroxysuccinimide

RL: CAT (Catalyst use); USES (Uses):

(activator; prepn. of crosslinked carboxy-contg. polysaccharides having controlled crosslinking degree and high reproducibility)

RN 6066-82-6 HCAPLUS

CN 2,5-Pyrrolidinedione, 1-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 2000:335447 HCAPLUS

DOCUMENT NUMBER: 132:323187

TITLE: Preparation of crosslinked carboxy-containing polysaccharides having controlled crosslinking degree and high reproducibility

INVENTOR(S): Barbucci, Rolando; Sportoletti, Giancarlo

PATENT ASSIGNEE(S): Aquisitio S.p.A., Italy

SOURCE: PCT Int. Appl., 27 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000027886	A1	20000518	WO 1999-EP8480	19991109 <--
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
IT 1303738	B1	20010223	IT 1998-MI2443	19981111
BR 9915238	A	20010724	BR 1999-15238	19991109 <--
EP 1137670	A1	20011004	EP 1999-971819	19991109 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
NO 2001002316	A	20010706	NO 2001-2316	20010510 <--
PRIORITY APPLN. INFO.: IT 1998-MI2443 A 19981111 <--				
WO 1999-EP8480 W 19991109 <--				

OTHER SOURCE(S): MARPAT 132:323187

AB The crosslinked carboxy-contg. polysaccharides, useful for medical, pharmaceutical and cosmetic fields, is prepd. by activating carboxy groups of a polysaccharide (e.g., CM-cellulose tetrabutylammonium salt) in anhyd. aprotic solvent (e.g., DMF) and then the reacting the activated polysaccharide with a polyamine (e.g., 1,3-diaminopropane). The crosslinked polysaccharide may be subjected to sulfation of the five

SOLOLA 09/622,001

hydroxy groups.
REFERENCE COUNT:

5

THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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L28 ANSWER 5 OF 15 HCAPLUS COPYRIGHT 2002 ACS

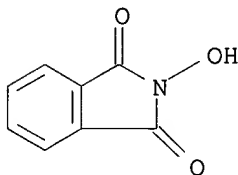
IT 524-38-9, N-Hydroxyphthalimide

RL: CAT (Catalyst use); USES (Uses)

(oxidn. catalysts; prepn. and sepn. of adamantanediols by oxidn. of
adamantanes and extn.)

RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 2000:89334 HCAPLUS

DOCUMENT NUMBER: 132:137133

TITLE: Preparation and separation of adamantanediols

INVENTOR(S): Chikamori, Masahiro; Noguchi, Takuya

PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000038360	A2	20000208	JP 1999-17825	19990127 <--
PRIORITY APPLN. INFO.:			JP 1998-156670	19980520 <--

OTHER SOURCE(S): MARPAT 132:137133

AB Alicyclic **alcs.** are prepd. by oxidn. of alicyclic hydrocarbons and/or their monools, extn. of alicyclic monools with arom. org. solvents and/or C.gtoreq.4 **alcs.** and alicyclic diols with aq. solvents, and extn. of diols with .gtoreq.1 org. solvents selected from C.gtoreq.4 **alcs.**, esters, and amines. Mixts. of alicyclic monools and diols are also sepd. by crystn. of monools with aq. solvents. and extn. of diols with C.gtoreq.4 **alcs.** and/or amine solvents. Adamantane was oxidized in the presence of N-hydroxyphthalimide and vanadium(III) acetylacetonato in AcOH at 90.degree. under 20 kg/cm2 for 3 h, distd., extd. using PhCO2Me-H2O solvent, and extd. with benzyl **alc.**, and crystd. to give 18.7% adamantanediol with 92.7 wt.% purity.

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L28 ANSWER 6 OF 15 HCAPLUS COPYRIGHT 2002 ACS

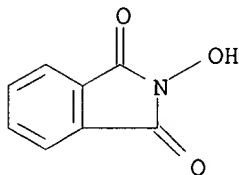
IT 524-38-9, N-Hydroxyphthalimide

RL: CAT (Catalyst use); USES (Uses)

(prepn. of **acetals** or **carbonyl** compds. by oxidn. of ethers using imide catalysts)

RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1999:728061 HCAPLUS

DOCUMENT NUMBER: 131:336738

TITLE: Preparation of **acetals** or **carbonyl** compounds by oxidation of ethers

INVENTOR(S): Ishii, Yasutaka; Nakano, Tatsuya

PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan; Ishi, Yasuytaka

SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

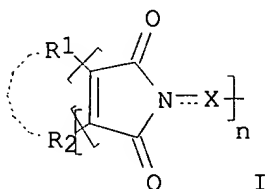
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11315036	A2	19991116	JP 1998-99996	19980326 <--
PRIORITY APPLN. INFO.: JP 1998-69459			19980304 <--	
OTHER SOURCE(S): CASREACT 131:336738; MARPAT 131:336738				

GI



AB Ethers are catalytically oxidized with O in the presence of imide I [R1, R2 = H, halo alkyl, aryl, cycloalkyl, OH, alkoxy, etc.; R1R2 may form double bond or (non)arom. ring; X = O, OH; n = 1-3] catalysts. (RbOCRa1Ra2)2O (Ra1, Ra2 = H, hydrocarbyl, heterocyclyl; Rb = hydrocarbyl, heterocyclyl; Ra1Ra2, Ra1Rb, or Ra2Rb may form ring) or Ra1CRa2O (Ra1, Ra2 = same as above) are prepd. from Ra1CHRa2ORb (Ra1, Ra2, Rb = same as above). Isochroman was oxidized in the presence of N-hydroxyphthalimide in acetonitrile under O at 60.degree. for 7 h to give 1,1'-

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oxydiisochroman, which was reacted with EtOH at room temp. for 30 min to give 68% 1-ethoxyisochroman.

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L28 ANSWER 7 OF 15 HCAPLUS COPYRIGHT 2002 ACS

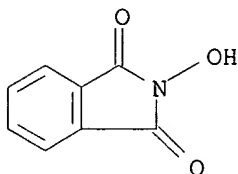
IT 524-38-9, N-Hydroxyphthalimide

RL: CAT (Catalyst use); USES (Uses)

(acylating agents contg. dicarbonyl compd., imide, and metal compd. for acylation of nonactivated **methine** carbon such as adamantane)

RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1999:529116 HCAPLUS

DOCUMENT NUMBER: 131:157613

TITLE: Acylating agents, acylation of nonactivated **methine** carbon with the use of the same and adamantane derivatives

INVENTOR(S): Ishii, Yasutaka; Nakano, Tatsuya; Hirai, Naruhisa

PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan

SOURCE: PCT Int. Appl., 82 pp.

CODEN: PIXXD2

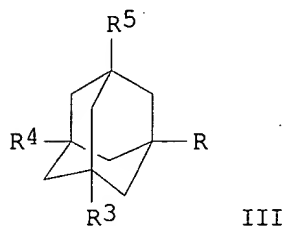
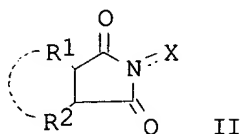
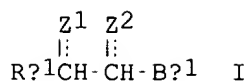
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9941219	A1	19990819	WO 1999-JP567	19990210 <--
W: US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
JP 11335304	A2	19991207	JP 1998-353620	19981211 <--
EP 990634	A1	20000405	EP 1999-902870	19990210 <--
R: DE, FR, GB				
PRIORITY APPLN. INFO.:			JP 1998-48880	19980213 <--
			JP 1998-100458	19980327 <--
			JP 1998-353620	19981211 <--
			WO 1999-JP567	19990210 <--
OTHER SOURCE(S):			CASREACT 131:157613; MARPAT 131:157613	
GI				



AB Acylating agents comprising: (A) a 1,2-dicarbonyl compd. or its hydroxy-redn. deriv. (I; R_{a1}, R_{b1} = C1-4 alkyl, cycloalkyl, aryl; or R_{a1} and R_{b1} are bonded to each other to form together with the adjacent two carbon atoms, a ring; Z₁, Z₂ = O, OH); (B) an enzyme; and (C) at least one compd. selected from among (c1) metal compds. and (c2) imide compds. such as N-hydroxyphthalimide (II; R₁, R₂ = H, halo, alkyl, aryl, cycloalkyl, OH, alkoxy, CO₂H, alkoxycarbonyl, acyl; or R₁ and R₂ are bonded to each other to form a double bond or an arom. or nonarom. ring optionally bonded to one or two imide groups; X = O, OH). As the 1,2-dicarbonyl compd. or its hydroxy-redn. deriv. (A), use may be made of biacetyl, 2,3-butanediol, etc. As the metal compds. (c1), use may be made of a cobalt compd. such as cobalt acetate. An acyl group can be efficiently introduced into a **methine** carbon atom by treating a compd. carrying a **methine** carbon atom such as an adamantane deriv. [III; R = acyl, R₅, R₄, R₃ = H, halo, alkyl, (un)protected OH, CH₂OH, NH₂, or CO₂H, NO₂, acyl; the carbon atoms constituting the adamantane skeleton other than the bridge head carbon optionally possess substituents] by the above acylating agent. Thus, a mixt. of adamantane 3, biacetyl 18, cobalt acetate 0.015 mmol, 3 mL AcOH was stirred under oxygen atm. at 60.degree. for 4 h to give 1-acetyladamantane 50, 1,3-diacetyladamantane 23, 1-acetyl-3-adamantanol 4, 1-adamantanol 3, and 2-adamantanone 3% with 85% conversion of adamantane.

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d hitstr ibib abs 8

L28 ANSWER 8 OF 15 HCAPLUS COPYRIGHT 2002 ACS

IT 524-38-9, N-Hydroxyphthalimide 105969-84-4

105969-98-0 147088-82-2 166036-20-0

173962-59-9 212557-14-7 212557-15-8

212557-16-9 214754-57-1 216986-22-0

216986-42-4 216986-51-5 216986-58-2

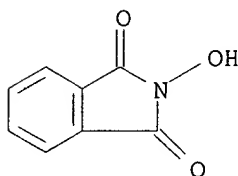
216986-67-3 216986-85-5 216986-93-5

RL: CAT (Catalyst use); USES (Uses)

(oxidn. of arom. hydrocarbons to aldehydes and alcs. using an
N-hydroxy amide mediator)

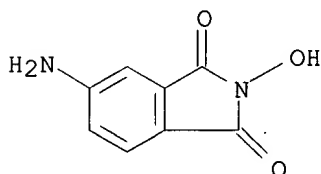
RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



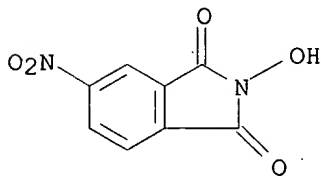
RN 105969-84-4 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 5-amino-2-hydroxy- (9CI) (CA INDEX NAME)



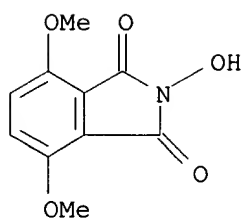
RN 105969-98-0 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy-5-nitro- (9CI) (CA INDEX NAME)

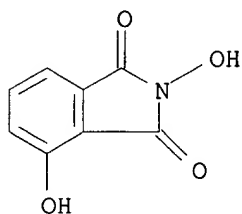


RN 147088-82-2 HCAPLUS

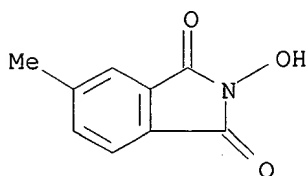
CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy-4,7-dimethoxy- (9CI) (CA INDEX NAME)



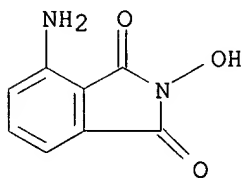
RN 166036-20-0 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, 2,4-dihydroxy- (9CI) (CA INDEX NAME)



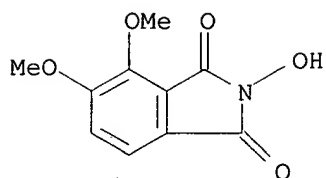
RN 173962-59-9 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy-5-methyl- (9CI) (CA INDEX NAME)



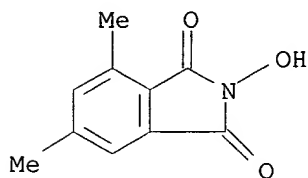
RN 212557-14-7 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, 4-amino-2-hydroxy- (9CI) (CA INDEX NAME)



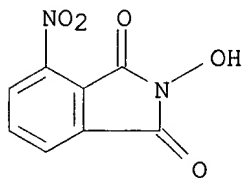
RN 212557-15-8 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy-4,5-dimethoxy- (9CI) (CA INDEX NAME)



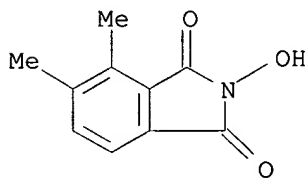
RN 212557-16-9 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy-4,6-dimethyl- (9CI) (CA INDEX NAME)



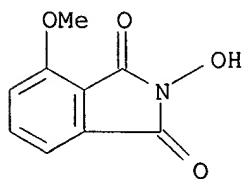
RN 214754-57-1 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy-4-nitro- (9CI) (CA INDEX NAME)



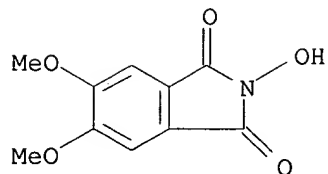
RN 216986-22-0 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy-4,5-dimethyl- (9CI) (CA INDEX NAME)



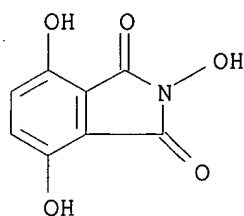
RN 216986-42-4 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy-4-methoxy- (9CI) (CA INDEX NAME)



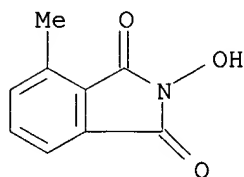
RN 216986-51-5 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy-5,6-dimethoxy- (9CI) (CA INDEX NAME)



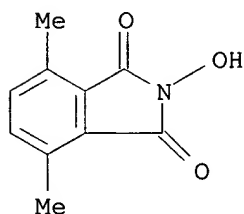
RN 216986-58-2 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, 2,4,7-trihydroxy- (9CI) (CA INDEX NAME)



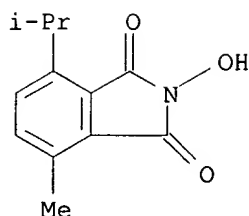
RN 216986-67-3 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy-4-methyl- (9CI) (CA INDEX NAME)



RN 216986-85-5 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy-4,7-dimethyl- (9CI) (CA INDEX NAME)



RN 216986-93-5 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy-4-methyl-7-(1-methylethyl)- (9CI)
(CA INDEX NAME)



ACCESSION NUMBER: 1998:811636 HCAPLUS
 DOCUMENT NUMBER: 130:52235
 TITLE: preparation of aromatic and **alcohols**
 INVENTOR(S): Fritz-Langhals, Elke; Freudenreich, Johannes
 PATENT ASSIGNEE(S): Consortium Fuer Elektrochemische Industrie G.m.b.H,
 Germany
 SOURCE: Ger. Offen., 26 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19723890	A1	19981210	DE 1997-19723890	19970606
EP 885868	A1	19981223	EP 1998-108751	19980514 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
US 6023000	A	20000208	US 1998-82638	19980521 <--
JP 11009292	A2	19990119	JP 1998-157630	19980605 <--
US 6297403	B1	20011002	US 2000-478280	20000105 <--
PRIORITY APPLN. INFO.:			DE 1997-19723890 A	19970606 <--
			US 1998-82638 A3	19980521 <--
OTHER SOURCE(S):		CASREACT 130:52235; MARPAT 130:52235		
AB Arom. aldehydes and alcs. are prepd. by oxidn. of arom. hydrocarbons using an N-hydroxy amide as mediator. Thus, 3,4-(MeO)2C6H3Me was oxidized with laccase in aq. buffer in presence of 3-amino-N-hydroxyphthalimide to give 50% 3,4-(MeO)C6H3CHO.				

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L28 ANSWER 9 OF 15 HCAPLUS COPYRIGHT 2002 ACS

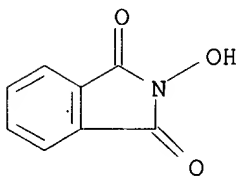
IT 524-38-9, N-Hydroxyphthalimide 4814-74-8,
 N-Hydroxymaleimide 5426-10-8, N-Hydroxyhexahydrophthalimide
 6066-82-6, N-Hydroxysuccinimide 57583-53-6, N,N'-
 Dihydroxypyromellitimide 85342-65-0,
 N-Hydroxytetrachlorophthalimide 110167-77-6 142109-85-1
 , N-Hydroxytetrabromophthalimide 213274-94-3 216392-96-0
 216392-97-1

RL: CAT (Catalyst use); USES (Uses)

(prepn. of arom. hydroxycarboxylic acid derivs. by oxidn. of
 methylaroms. in the presence of imides)

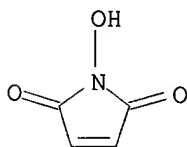
RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



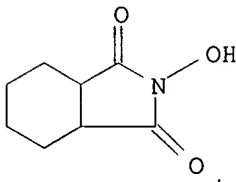
RN 4814-74-8 HCAPLUS

CN 1H-Pyrrole-2,5-dione, 1-hydroxy- (9CI) (CA INDEX NAME)



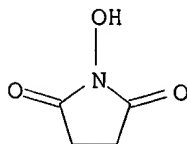
RN 5426-10-8 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, hexahydro-2-hydroxy- (9CI) (CA INDEX NAME)

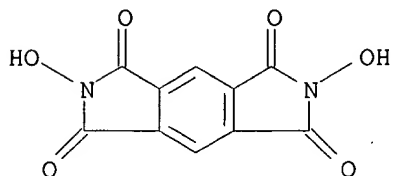


RN 6066-82-6 HCAPLUS

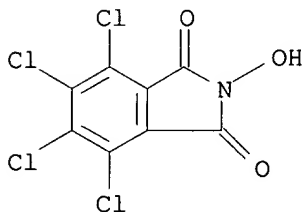
CN 2,5-Pyrrolidinedione, 1-hydroxy- (9CI) (CA INDEX NAME)



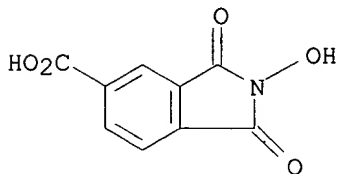
RN 57583-53-6 HCAPLUS
 CN Benzo[1,2-c:4,5-c']dipyrrole-1,3,5,7(2H,6H)-tetrone, 2,6-dihydroxy- (9CI)
 (CA INDEX NAME)



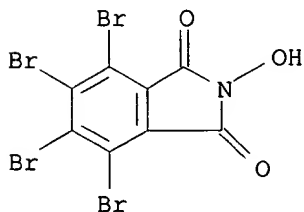
RN 85342-65-0 HCAPLUS
 CN 1H-Isoindole-1,3(2H)-dione, 4,5,6,7-tetrachloro-2-hydroxy- (9CI) (CA
 INDEX NAME)



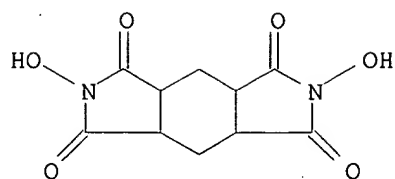
RN 110167-77-6 HCAPLUS
 CN 1H-Isoindole-5-carboxylic acid, 2,3-dihydro-2-hydroxy-1,3-dioxo- (9CI)
 (CA INDEX NAME)



RN 142109-85-1 HCAPLUS
 CN 1H-Isoindole-1,3(2H)-dione, 4,5,6,7-tetrabromo-2-hydroxy- (9CI) (CA INDEX
 NAME)

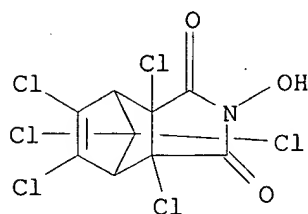


RN 213274-94-3 HCAPLUS
 CN Benzo[1,2-c:4,5-c']dipyrrole-1,3,5,7(2H,6H)-tetrone, hexahydro-2,6-
 dihydroxy- (9CI) (CA INDEX NAME)



RN 216392-96-0 HCAPLUS

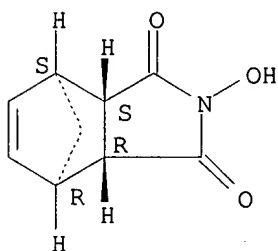
CN 4,7-Methano-1H-isoindole-1,3(2H)-dione, 3a,5,6,7a,8,8-hexachloro-3a,4,7,7a-tetrahydro-2-hydroxy- (9CI) (CA INDEX NAME)



RN 216392-97-1 HCAPLUS

CN 4,7-Methano-1H-isoindole-1,3(2H)-dione, 3a,4,7,7a-tetrahydro-2-hydroxy-, (3aR,4R,7S,7aS)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



ACCESSION NUMBER: 1998:764183 HCAPLUS

DOCUMENT NUMBER: 130:24856

TITLE: Preparation of aromatic hydroxycarboxylic acid derivatives by oxidation of methylaromatics in the presence of imides.

INVENTOR(S): Ishii, Yasutaka; Nakano, Tatsuya

PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan

SOURCE: Eur. Pat. Appl., 11 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

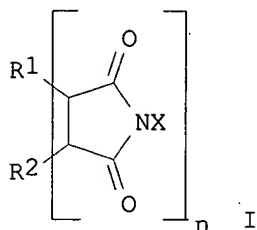
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 879812	A1	19981125	EP 1998-109114	19980519 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				

JP 10316625 A2 19981202 JP 1997-129471 19970520
 US 6020522 A 20000201 US 1998-75250 19980511 <--
 PRIORITY APPLN. INFO.: JP 1997-129471 19970520 <--
 OTHER SOURCE(S): CASREACT 130:24856; MARPAT 130:24856
 GI



AB Arom. hydroxycarboxylic acid derivs. are prepd. by contacting Me-contg. arom. compds. with O in the presence of imides [I; R1, R2 = H, halo, alkyl, aryl, cycloalkyl, OH, alkoxy, CO2H, alkoxycarbonyl, acyl; R1R2 = bond, (arom.) ring; X = O, OH; n = 1-3]. Thus, p-cresol was refluxed with AcOH at 110.degree. for 5 h to give a soln. of p-acetoxytoluene. N-hydroxyphthalimide and Co(II) acetylacetonate were added and the mixt. was stirred 6 h at 100.degree. under O to give 92% p-acetoxybenzoic acid, which was converted to the Me ester.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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L28 ANSWER 10 OF 15 HCAPLUS COPYRIGHT 2002 ACS

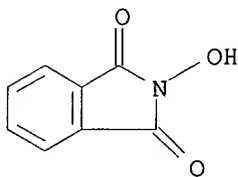
IT 524-38-9, N-Hydroxyphthalimide 4814-74-8,
N-Hydroxymaleimide 5426-10-8, N-Hydroxyhexahydrophthalimide
6066-82-6, N-Hydroxysuccinimide 16626-06-5
57583-53-6, N,N'-Dihydroxypyromellitimide
85342-65-0, N-Hydroxytetrachlorophthalimide 110167-77-6
137373-35-4 142109-85-1, N-Hydroxytetrabromophthalimide
213274-94-3 215175-29-4

RL: CAT (Catalyst use); USES (Uses)

(process and imide catalysts for the oxidn. of nonarom. ethers to
esters or anhydrides)

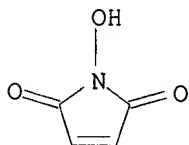
RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



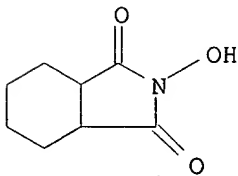
RN 4814-74-8 HCAPLUS

CN 1H-Pyrrole-2,5-dione, 1-hydroxy- (9CI) (CA INDEX NAME)



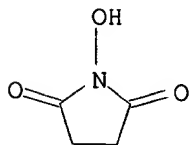
RN 5426-10-8 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, hexahydro-2-hydroxy- (9CI) (CA INDEX NAME)

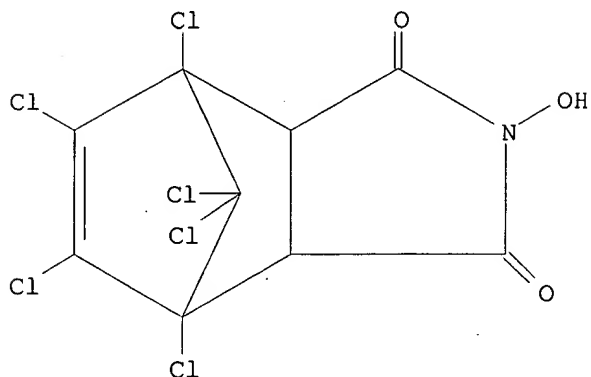


RN 6066-82-6 HCAPLUS

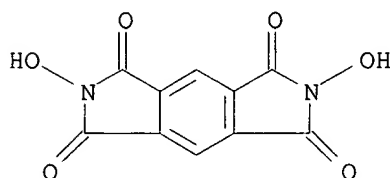
CN 2,5-Pyrrolidinedione, 1-hydroxy- (9CI) (CA INDEX NAME)



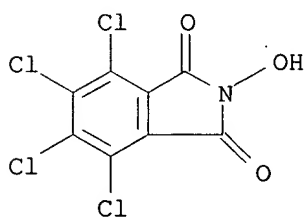
RN 16626-06-5 HCAPLUS
 CN 4,7-Methano-1H-isoindole-1,3(2H)-dione, 4,5,6,7,8,8-hexachloro-3a,4,7,7a-tetrahydro-2-hydroxy- (9CI) (CA INDEX NAME)



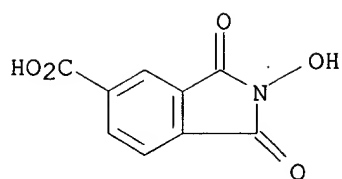
RN 57583-53-6 HCAPLUS
 CN Benzo[1,2-c:4,5-c']dipyrrole-1,3,5,7(2H,6H)-tetrone, 2,6-dihydroxy- (9CI) (CA INDEX NAME)



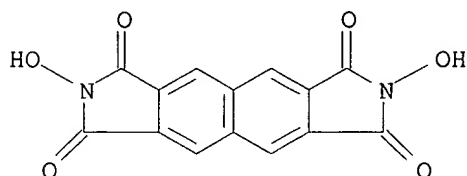
RN 85342-65-0 HCAPLUS
 CN 1H-Isoindole-1,3(2H)-dione, 4,5,6,7-tetrachloro-2-hydroxy- (9CI) (CA INDEX NAME)



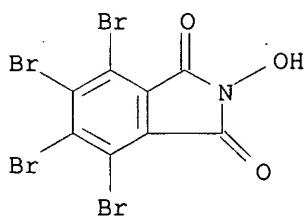
RN 110167-77-6 HCAPLUS
 CN 1H-Isoindole-5-carboxylic acid, 2,3-dihydro-2-hydroxy-1,3-dioxo- (9CI) (CA INDEX NAME)



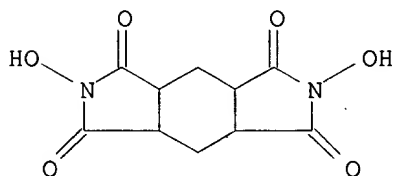
RN 137373-35-4 HCAPLUS
CN Isoindolo[5,6-f]isoindole-1,3,6,8(2H,7H)-tetrone, 2,7-dihydroxy- (9CI)
(CA INDEX NAME)



RN 142109-85-1 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, 4,5,6,7-tetrabromo-2-hydroxy- (9CI) (CA INDEX NAME)

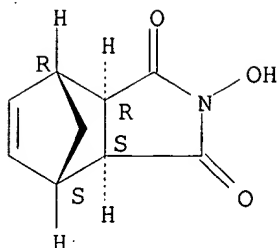


RN 213274-94-3 HCAPLUS
CN Benzo[1,2-c:4,5-c']dipyrrole-1,3,5,7(2H,6H)-tetrone, hexahydro-2,6-dihydroxy- (9CI) (CA INDEX NAME)



RN 215175-29-4 HCAPLUS
CN 4,7-Methano-1H-isoindole-1,3(2H)-dione, 3a,4,7,7a-tetrahydro-2-hydroxy-, (3aR,4R,7S,7aS)- (9CI) (CA INDEX NAME)

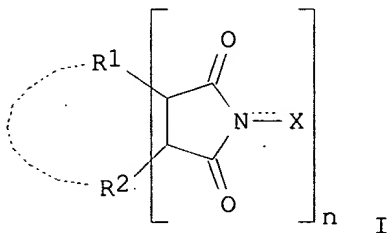
Absolute stereochemistry.



ACCESSION NUMBER: 1998:760025 HCAPLUS
 DOCUMENT NUMBER: 129:331158
 TITLE: Process and imide catalysts for the oxidation of nonaromatic ethers to esters or anhydrides
 INVENTOR(S): Ishii, Yasutaka; Nakano, Tatsuya
 PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan
 SOURCE: Eur. Pat. Appl., 12 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 878458	A1	19981118	EP 1998-108533	19980511 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 10316610	A2	19981202	JP 1997-122526	19970513
US 6037477	A	20000314	US 1998-74604	19980508 <--
PRIORITY APPLN. INFO.:			JP 1997-122526	19970513 <--
OTHER SOURCE(S):	MARPAT 129:331158			

GI



AB Linear or cyclic nonarom. ethers (e.g., phthalide) are oxidized with oxygen in the presence of an imide oxidn. catalyst [I; R1, R2 = H, halogen, alkyl, aryl, cycloalkyl, OH, alkoxycarbonyl, acyl; n = 1-3; X = O, OH; R1R2 = double bond or (non)arom. ring moiety] and an optional cocatalyst (e.g., a transition metal compd.) to produce the corresponding chain or cyclic ester or anhydride in high yield and selectivity. Thus, phthalide was oxidized in PhCN in the presence of 2 mol % N-hydroxyphthalimide with O₂(g) at 100.degree., producing phthalic anhydride in 46% yield.

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L28 ANSWER 11 OF 15 HCAPLUS COPYRIGHT 2002 ACS

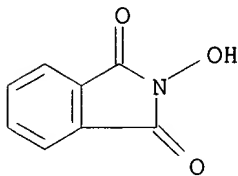
IT 524-38-9, N-Hydroxyphthalimide

RL: CAT (Catalyst use); USES (Uses)

(oxidn. process and substituted-imide-transition-metal-complex catalysts for the manuf. of tertiary **alcs.** and ketones from branched aliph. hydrocarbons)

RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1998:618664 HCAPLUS

DOCUMENT NUMBER: 129:218233

TITLE: Oxidation process and substituted-imide-transition-metal-complex catalysts for the manufacture of tertiary **alcohols** and ketones from branched aliphatic hydrocarbons

INVENTOR(S): Nakano, Tatsuya; Ishii, Yasutaka

PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan

SOURCE: Eur. Pat. Appl., 13 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 864555	A1	19980916	EP 1998-103834	19980304 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 10310543	A2	19981124	JP 1997-210973	19970805 <--
CN 1193006	A	19980916	CN 1998-105437	19980309 <--
US 6037507	A	20000314	US 1998-37703	19980310 <--
PRIORITY APPLN. INFO.:			JP 1997-56517	19970311 <--
			JP 1997-210973	19970805 <--

OTHER SOURCE(S): MARPAT 129:218233

AB Noncyclic, branched aliph. hydrocarbons (e.g., isobutane) are oxidized with oxygen in the presence of a substituted-imide-transition-metal-complex catalyst [e.g., N-hydroxyphthalimide and Co(OAc)₂] to produce tertiary **alcs.** (e.g., tert-butanol) and ketones (e.g., acetone) in high yield and selectivity.

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L28 ANSWER 11 OF 15 HCAPLUS COPYRIGHT 2002 ACS

TI Oxidation process and substituted-imide-transition-metal-complex catalysts for the manufacture of tertiary **alcohols** and ketones from branched aliphatic hydrocarbons

PRAI JP 1997-56517 19970311 <--
 JP 1997-210973 19970805 <--

AB . . . (e.g., isobutane) are oxidized with oxygen in the presence of a substituted-imide-transition-metal-complex catalyst [e.g., N-hydroxyphthalimide and Co(OAc)₂] to produce tertiary **alcs.** (e.g., tert-butanol) and ketones (e.g., acetone) in high yield and selectivity.

ST isobutane oxidn acetone butanol manuf; hydrocarbon oxidn catalyst imide transition metal; branched hydrocarbon oxidn **alc** ketone manuf

IT Hydrocarbons, reactions
 RL: RCT (Reactant)
 (branched; oxidn. process and imide-transition metal-complex catalysts for the manuf. of tertiary **alcs.** and ketones from)

IT **Alcohols**, preparation
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (branched; oxidn. process and substituted-imide-transition-metal-complex catalysts for the manuf. of branched **alcs.** from branched aliph. hydrocarbons)

IT Transition metal compounds
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts with substituted imides for the oxidn. of branched aliph. hydrocarbons into tertiary **alcs.** and ketones)

IT Rare earth metals, uses
 RL: CAT (Catalyst use); USES (Uses)
 (compds.; catalysts with substituted imides for the oxidn. of branched aliph. hydrocarbons into tertiary **alcs.** and ketones)

IT Oxidation
 (for the manuf. of tertiary **alcs.** and ketones from branched aliph. hydrocarbons)

IT Branched alkanes
 RL: RCT (Reactant)
 (oxidn. process and imide-transition metal-complex catalysts for the manuf. of tertiary **alcs.** and ketones from)

IT Ketones, preparation
 Tertiary **alcohols**
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (oxidn. process and substituted-imide-transition-metal-complex catalysts for the manuf. of tertiary **alcs.** and ketones from branched aliph. hydrocarbons)

IT Oxidation catalysts
 (substituted imide-transition metal-complexes for the manuf. of tertiary **alcs.** and ketones from branched aliph. hydrocarbons)

IT Imides
 RL: CAT (Catalyst use); USES (Uses)
 (substituted; catalysts with transition metals for the oxidn. of branched aliph. hydrocarbons into tertiary **alcs.** and ketones)

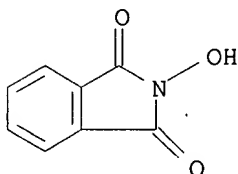
IT **524-38-9**, N-Hydroxyphthalimide 7439-89-6, Iron, uses 7439-96-5, Manganese, uses 7439-98-7, Molybdenum, uses 7440-02-0, Nickel, uses 7440-16-6, Rhodium, uses 7440-18-8, Ruthenium, uses 7440-32-6, Titanium, uses 7440-33-7, Tungsten, uses 7440-47-3, Chromium, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses 7440-62-2, Vanadium, uses 7440-67-7, Zirconium, uses
 RL: **CAT (Catalyst use)**; USES (Uses)
 (oxidn. process and substituted-imide-transition-metal-complex catalysts for the manuf. of tertiary **alcs.** and ketones from branched aliph. hydrocarbons)

IT 67-64-1P, Acetone, preparation 75-65-0P, tert-Butanol, preparation
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (oxidn. process and substituted-imide-transition-metal-complex catalysts for the manuf. of tertiary **alcs.** and ketones from

IT branched aliph. hydrocarbons)
75-28-5, Isobutane
RL: RCT (Reactant)
 (oxidn. process and substituted-imide-transition-metal-complex
 catalysts for the manuf. of tertiary **alcs.** and ketones from
 branched aliph. hydrocarbons)

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L28 ANSWER 12 OF 15 HCAPLUS COPYRIGHT 2002 ACS
 IT 524-38-9, N-Hydroxyphthalimide
 RL: CAT (Catalyst use); USES (Uses)
 (prepn. of aminocarboxylic acids by carboxymethylation)
 RN 524-38-9 HCAPLUS
 CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1998:568795 HCAPLUS
 DOCUMENT NUMBER: 129:189670
 TITLE: Process for the preparation of acylaminocarboxylic acids by carboxymethylation
 INVENTOR(S): Stern, Michael K.; Johnson, Todd J.; Rogers, Michael D.; Levine, Jeffrey A.; Morgenstern, David A.; Fobian, Yvette M.
 PATENT ASSIGNEE(S): Monsanto Company, USA
 SOURCE: PCT Int. Appl., 160 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 4
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9835930	A1	19980820	WO 1998-US2882	19980212 <--
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9863264	A1	19980908	AU 1998-63264	19980212 <--
AU 740288	B2	20011101		
EP 973719	A1	20000126	EP 1998-907465	19980212 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
BR 9806266	A	20001017	BR 1998-6266	19980212 <--
US 6153753	A	20001128	US 1998-22967	19980212 <--
JP 2001511810	T2	20010814	JP 1998-535970	19980212 <--
ZA 9801220	A	19980817	ZA 1998-1220	19980213 <--
NO 9902245	A	19990812	NO 1999-2245	19990507 <--
US 6265605	B1	20010724	US 2000-499699	20000207 <--
AU 728830	B2	20010118	AU 2000-17567	20000217 <--
US 2002002281	A1	20020103	US 2001-871829	20010601 <--
PRIORITY APPLN. INFO.:			US 1997-37775P	P 19970213 <--
			AU 1998-61663	A3 19980212 <--

US 1998-22967 A3 19980212 <--
 WO 1998-US2882 W 19980212 <--
 US 2000-499699 A3 20000207

OTHER SOURCE(S): CASREACT 129:189670; MARPAT 129:189670

AB A process for the prepn. of N-acylamino carboxylic acids by carboxymethylation reactions is described. In these reactions, a reaction mixt. is formed which contains a base pair, carbon monoxide, hydrogen, and an aldehyde with the base pair comprising a carbamoyl compd. and a carboxymethylation catalyst precursor. In a preferred embodiment, the carbamoyl compd. and aldehyde are selected to yield an N-acylamino carboxylic acid which is readily converted to N-(phosphonomethyl)glycine, or a salt or ester thereof. Addnl., a process for oxidative dealkylation of N-alkylglyphosate derivs. with oxygen in the presence of platinum and a catalyst modifier is described. Thus, 11.8 g of acetamide, 13.6 g of 95% paraformaldehyde, 12.9 g water, 1.8 g 37% HCl, 90 mL DME, and 4.1 g Co₂(CO)₈ was added to a 300 mL autoclave and pressurized to 1500 psi with CO at 25.degree.. The mixt. was heated to 110.degree. for 30 min, and HPLC anal. gave 87% of N-acetylaminodiacetic acid along with 0.5% iminodiacetic acid and 4.0% N-acetyl glycine. Many other reactions using different **carbonyl** compds., different cobalt catalysts, and different reaction conditions are given.

=> d 12 kwic

L28 ANSWER 12 OF 15 HCAPLUS COPYRIGHT 2002 ACS

PRAI US 1997-37775P P 19970213 <--
 AU 1998-61663 A3 19980212 <--
 US 1998-22967 A3 19980212 <--
 WO 1998-US2882 W 19980212 <--
 US 2000-499699 A3 20000207

AB . . . HPLC anal. gave 87% of N-acetylaminodiacetic acid along with 0.5% iminodiacetic acid and 4.0% N-acetyl glycine. Many other reactions using different **carbonyl** compds., different cobalt catalysts, and different reaction conditions are given.

IT 102-54-5, Ferrocene 345-92-6, 4,4'-Difluorobenzophenone 519-73-3, Triphenylmethane 524-38-9, N-Hydroxyphthalimide 2564-83-2, TEMPO 4316-58-9, Tris(4-bromophenyl)amine 7061-81-6 7440-06-4, Platinum, uses 14172-92-0 14323-06-9, Rutheniumtris(2,2'-bipyridine) dichloride 22541-53-3, uses 170645-84-8 211934-69-9
 RL: **CAT (Catalyst use)**; USES (Uses)

(prepn. of aminocarboxylic acids by carboxymethylation)
 IT 50-00-0, Formaldehyde, reactions 57-13-6, Urea, reactions 60-35-5, Acetamide, reactions 71-48-7, Cobalt diacetate 75-07-0, **Acetaldehyde**, reactions 78-84-2, Isobutyraldehyde 79-16-3, N-Methylacetamide 96-31-1, 1,3-Dimethylurea 630-08-0, Carbon monoxide, reactions 1002-88-6, Cobalt(II) stearate 3268-49-3, 3-Methylthiopropionaldehyde 3852-14-0, Methylenebisacetamide 4408-64-4 5076-82-4, Sarcosine anhydride 14024-48-7, Cobalt(II) acetylacetonate 30525-89-4, Paraformaldehyde 44897-56-5 57637-91-9, N,N'-Bis(phosphonomethyl)urea 104608-53-9
 RL: RCT (Reactant)
 (prepn. of aminocarboxylic acids by carboxymethylation)

=> d hitstr ibib abs 13

L28 ANSWER 13 OF 15 HCAPLUS COPYRIGHT 2002 ACS

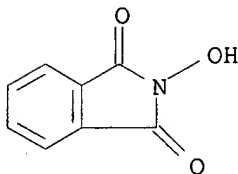
IT 524-38-9, N-Hydroxyphthalimide

RL: CAT (Catalyst use); USES (Uses)

(nitration or carboxylation catalysts)

RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1998:490566 HCAPLUS

DOCUMENT NUMBER: 129:127630

TITLE: Nitration or carboxylation catalysts

INVENTOR(S): Ishii, Yasutaka; Nakano, Tatsuya; Sakaguchi, Satoshi

PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan; Ishii,

Yasutaka; Nakano, Tatsuya; Sakaguchi, Satoshi

SOURCE: PCT Int. Appl., 92 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

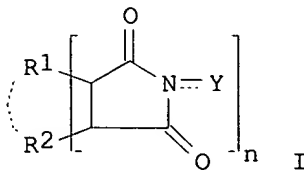
FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9830329	A1	19980716	WO 1998-JP79	19980113 <--
W: US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 897747	A1	19990224	EP 1998-900216	19980113 <--
R: DE, FR, GB				
PRIORITY APPLN. INFO.:			JP 1997-4439	19970114 <--
			JP 1997-32440	19970217 <--
			JP 1997-209430	19970804 <--
			WO 1998-JP79	19980113 <--

OTHER SOURCE(S): MARPAT 129:127630

GI



AB At least one functional group selected between nitro and carboxyl groups can be introduced into a substrate by bringing the substrate into contact with at least one reactant selected from among (i) nitrogen oxides and (ii) carbon monoxide/oxygen mixts. in the presence of an imide compd.

represented by general formula I (R1 and R2 = hydrogen, halogeno, alkyl, aryl or cycloalkyl, or alternatively they may be united to form a double bond or an arom. or nonarom. ring; W = O or OH; and n is 1 to 3), e.g., N-hydroxy-phthalimide. The nitrogen oxides include compds. for the general formula: N_xO_y (such as N_2O_3 and N_2O_2), and the substrate includes compds. bearing **methyne** carbon atoms, such as adamantane, and arom. compds. having a Me or methylene group at the position adjacent to the arom. ring. Such a process enables efficient nitration or carboxylation even under relatively mild conditions.

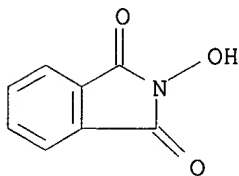
=> d hitstr ibib abs 14

L28 ANSWER 14 OF 15 HCAPLUS COPYRIGHT 2002 ACS

IT 524-38-9, N-Hydroxyphthalimide 4814-74-8,
N-Hydroxymaleimide 5426-10-8, N-Hydroxyhexahydrophthalimide
6066-82-6, N-Hydroxysuccinimide 16626-06-5
21715-90-2 57583-53-6, N,N-
Dihydroxypyromellitimide 85342-65-0,
N-Hydroxytetrachlorophthalimide 110167-77-6
RL: CAT (Catalyst use); USES (Uses)
(oxidn. catalyst system and process for oxidn. with the same)

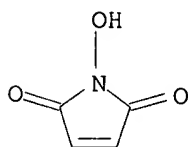
RN 524-38-9 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



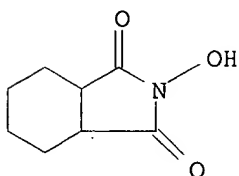
RN 4814-74-8 HCAPLUS

CN 1H-Pyrrole-2,5-dione, 1-hydroxy- (9CI) (CA INDEX NAME)



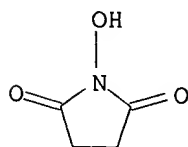
RN 5426-10-8 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, hexahydro-2-hydroxy- (9CI) (CA INDEX NAME)



RN 6066-82-6 HCAPLUS

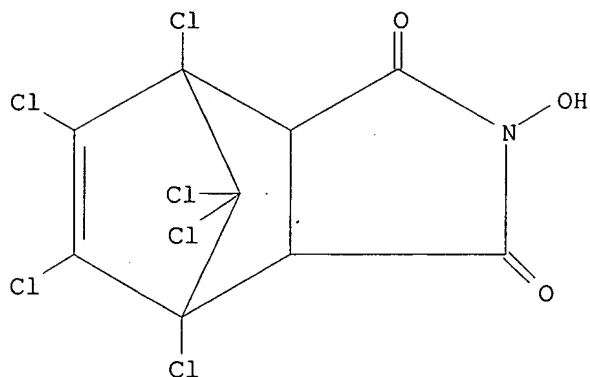
CN 2,5-Pyrrolidinedione, 1-hydroxy- (9CI) (CA INDEX NAME)



RN 16626-06-5 HCAPLUS

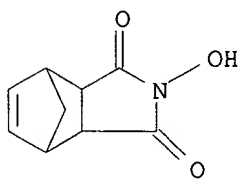
CN 4,7-Methano-1H-isoindole-1,3(2H)-dione, 4,5,6,7,8,8-hexachloro-3a,4,7,7a-

tetrahydro-2-hydroxy- (9CI) (CA INDEX NAME)



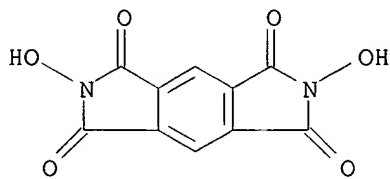
RN 21715-90-2 HCAPLUS

CN 4,7-Methano-1H-isoindole-1,3(2H)-dione, 3a,4,7,7a-tetrahydro-2-hydroxy- (9CI) (CA INDEX NAME)



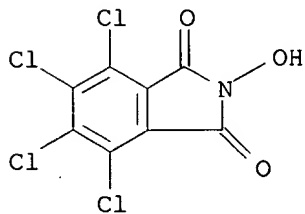
RN 57583-53-6 HCAPLUS

CN Benzo[1,2-c:4,5-c']dipyrrole-1,3,5,7(2H,6H)-tetrone, 2,6-dihydroxy- (9CI) (CA INDEX NAME)

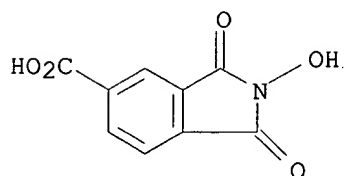


RN 85342-65-0 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 4,5,6,7-tetrachloro-2-hydroxy- (9CI) (CA INDEX NAME)



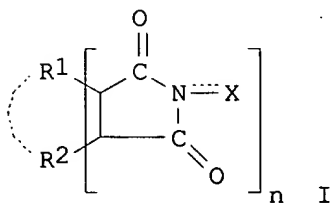
RN 110167-77-6 HCAPLUS
 CN 1H-Isoindole-5-carboxylic acid, 2,3-dihydro-2-hydroxy-1,3-dioxo- (9CI)
 (CA INDEX NAME)



ACCESSION NUMBER: 1997:542374 HCAPLUS
 DOCUMENT NUMBER: 127:206051
 TITLE: Oxidation catalyst system and process for oxidation with the same
 INVENTOR(S): Ishii, Yasutaka; Nakano, Tatsuya
 PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan; Ishii, Yasutaka; Nakano, Tatsuya
 SOURCE: PCT Int. Appl., 101 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9728897	A1	19970814	WO 1997-JP279	19970206 <--
W: CN, KR, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
JP 09278675	A2	19971028	JP 1996-184866	19960715 <--
TW 448137	B	20010801	TW 1997-86101397	19970205 <--
JP 09327626	A2	19971222	JP 1997-23631	19970206 <--
EP 824962	A1	19980225	EP 1997-902584	19970206 <--
R: CH, DE, ES, FR, GB, IT, LI, NL, SE				
CN 1185757	A	19980624	CN 1997-190284	19970206 <--
US 5958821	A	19990928	US 1997-913881	19970924 <--
PRIORITY APPLN. INFO.:			JP 1996-46804	A 19960207 <--
			JP 1996-46805	A 19960207 <--
			JP 1996-48184	A 19960208 <--
			JP 1996-47920	A 19960209 <--
			JP 1996-47921	A 19960209 <--
			JP 1996-48188	A 19960211 <--
			JP 1996-184866	A 19960715 <--
			WO 1997-JP279	W 19970206 <--

OTHER SOURCE(S): MARPAT 127:206051
 GI



AB Substrates (such as cycloalkanes, polycyclic hydrocarbons or arom. compds. having Me or methylene adjacent to their resp. arom. rings) are converted into oxides (such as ketones, **alcs.** or carboxylic acids) through oxygenation in the presence of an oxidn. catalyst system comprising an imide compd. I (such as N-hydroxyphthalimide) and a co-catalyst contg. an element selected from Group 2A elements transition metals (Group 3A to 7A, 8, 1B and 2B elements) and Group 3B elements (except phosphovanadomolybdic acid) ($R_1, R_2 = H$ or a substituent such as halogen, or $R_1R_2 = \text{double bond}$, an arom. or non-arom. 5- to 12-membered ring member; $X = O, OH$; $n = 1-3$). Cyclohexane was stirred with N-hydroxyphthalimide, Mg acetylacetonate, and AcOH under O atm. at 100.degree. for 6 h with conversion 55% and adipic acid selectivity 82%, with no cyclohexanol-cyclohexanone formation.

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L28 ANSWER 15 OF 15 HCAPLUS COPYRIGHT 2002 ACS

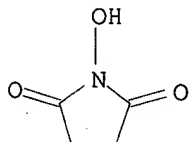
IT 6066-82-6, N-Hydroxysuccinimide

RL: CAT (Catalyst use); USES (Uses)

(prepn. of amides and peptides without racemization in the presence of a carbodiimide and catalytic amts. of an N-hydroxy compd.)

RN 6066-82-6 HCAPLUS

CN 2,5-Pyrrolidinedione, 1-hydroxy- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1995:346762 HCAPLUS

DOCUMENT NUMBER: 122:133857

TITLE: Preparation of amides and peptides without racemization in the presence of a carbodiimide and catalytic amounts of an N-hydroxy compound.

INVENTOR(S): Hohler, Markus; Vogt, Peter

PATENT ASSIGNEE(S): F. Hoffmann-La Roche AG, Switz.

SOURCE: Eur. Pat. Appl., 8 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 611774	A1	19940824	EP 1994-101784	19940207 <--
EP 611774	B1	19990526		
R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL				
AT 180491	E	19990615	AT 1994-101784	19940207 <--
ES 2133428	T3	19990916	ES 1994-101784	19940207 <--
JP 06256225	A2	19940913	JP 1994-39301	19940215 <--
JP 2524685	B2	19960814		
US 5536816	A	19960716	US 1994-196750	19940215 <--
CN 1111237	A	19951108	CN 1994-101380	19940218 <--
CN 1035873	B	19970917		
US 5750649	A	19980512	US 1996-606104	19960223 <--
PRIORITY APPLN. INFO.:			CH 1993-518	19930219 <--
			US 1994-196750	19940215 <--

OTHER SOURCE(S): CASREACT 122:133857

AB Amides and peptides were prepd. by reaction of a carboxylic acid with a primary or secondary amine in the presence of a carbodiimide and a catalytic amt. of an N-hydroxy compd. Thus, H-Val-Gln-Ala-Ile-Asp-Tyr-Ile-Asn-Gly-OH was prepd. using Fmoc-protected amino acids, benzyloxybenzyl alc. polystyrene resin, and 1 equiv. DCC with 0.1 equiv. 1-hydroxy-2-pyridone per coupling.

=> d 15 kwic

L28 ANSWER 15 OF 15 HCAPLUS COPYRIGHT 2002 ACS

PRAI CH 1993-518 19930219 <--
 US 1994-196750 19940215 <--

AB . . . of a carbodiimide and a catalytic amt. of an N-hydroxy compd.
 Thus, H-Val-Gln-Ala-Ile-Asp-Tyr-Ile-Asn-Gly-OH was prep'd. using
 Fmoc-protected amino acids, benzyloxybenzyl alc. polystyrene
 resin, and 1 equiv. DCC with 0.1 equiv. 1-hydroxy-2-pyridone per coupling.

IT 822-89-9, 1-Hydroxy-2-pyridone 2592-95-2, 1-Hydroxybenzotriazole
 5319-71-1, 3-Hydroxy-4-oxo-3,4-dihydroquinazoline 6066-82-6,
 N-Hydroxysuccinimide 18108-55-9, 1-Hydroxy-2-oxoindoline 28230-32-2,
 3-Hydroxy-4-oxo-3,4-dihydro-1,2,3-benzotriazine
 RL: CAT (Catalyst use); USES (Uses)
 (prepn. of amides and peptides without racemization in the presence of
 a carbodiimide and catalytic amts. of an N-hydroxy compd.)

IT 93-10-7, 2-Quinolinecarboxylic acid 99-50-3, 3,4-
Dihydroxybenzoic acid 302-01-2, Hydrazine, reactions 538-75-0
 693-13-0, Diisopropylcarbodiimide 1164-16-5, Z-Tyr-OH 1499-46-3,
 Histidine methyl ester 2304-96-3, Z-Asn-OH 2491-17-0 5545-54-0
 22888-60-4 25952-53-8 29022-11-5D, Fmoc-Gly-OH, resin bound
 57260-73-8, tert-Butyl (2-aminoethyl)carbamate 86873-60-1,
 5-Chloro-2-pyridinecarboxylic acid 114530-04-0, (S)-.alpha.-[(tert-
 Butylsulfonyl)methyl]hydrocinnamic acid 122224-94-6 134362-04-2,
 (1S,2R,3S)-3-Amino-4-cyclohexyl-1-cyclopropylbutane-1,2-diol
 136465-98-0, N-(2-Quinolinecarbonyl)asparagine 136522-17-3
 144412-03-3, tert-Butyl (4-piperidinyl)acetate 149343-40-8
 160803-61-2
 RL: RCT (Reactant)
 (prepn. of amides and peptides without racemization in the presence of
 a carbodiimide and catalytic amts. of an N-hydroxy compd.)

Invent Search

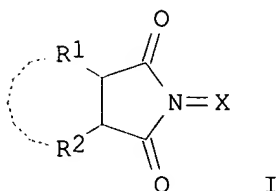
Solola 09/622,011

=> d ibib abs hitstr 1

L9 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2002 ACS
 ACCESSION NUMBER: 2000:421066 HCAPLUS
 DOCUMENT NUMBER: 133:60353
 TITLE: preparation of organic compounds with **imide catalysts**
 INVENTOR(S): Ishii, Yasutaka; Iwahama, Takahiro
 ; Nakano, Tatsuya
 PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan
 SOURCE: PCT Int. Appl., 133 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000035835	A1	20000622	WO 1999-JP6891	19991209
W: JP, KR, US				
RW: DE, FR, GB				
EP 1055654	A1	20001129	EP 1999-959710	19991209
R: DE, FR, GB				
PRIORITY APPLN. INFO.:			JP 1998-353621	A 19981211
			JP 1998-353622	A 19981211
			JP 1999-65651	A 19990311
			JP 1999-136340	A 19990517
			WO 1999-JP6891	W 19991209

OTHER SOURCE(S): MARPAT 133:60353
 GI

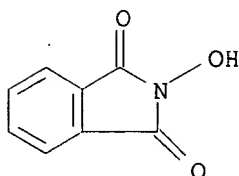


AB **Imide** compd. I (R1 and R2 are H, halogen alkyl, and etc., or are united to form a double bond or a ring, X is oxygen or hydroxyl) is a reaction catalyst for a stable radical-forming compd. (including oxygen compds. having carbon-hydrogen bonds adjacent to the oxygen atom, carbonyl compds. and compds. having hydrocarbon groups bearing methyne carbon) with a radical-scavenging compd. (including unsatd. compds., compds. having hydrocarbon groups bearing methyne carbon) in the presence of mol. oxygen. Thus, Et acrylate 3 mmol and 2-propanol 3 mL were reacted in the presence of N-hydroxyphthalimide 0.6 mmol and cobalt (II) acetate 0.015 mmol, cobalt (III) acetylacetonate 0.045 mmol to give Et 2,4-dihydroxy-4-methylmetanate 35%, .alpha.-hydroxy-.gamma.,.gamma.-dimethyl.gamma.-butyrolactone 35% at the conversion of Et acrylate 81%.

IT **524-38-9**

RL: CAT (Catalyst use); USES (Uses)
 . (prepn. of org. compds. with **imide** catalysts)

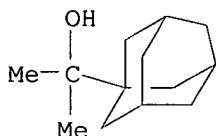
RN 524-38-9 HCAPLUS
 CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



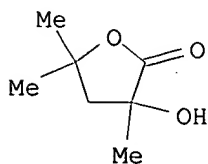
IT 775-64-4P 1195-55-7P 2396-84-1P, Ethyl sorbate
 3123-97-5P 3574-58-1P 7775-55-5P
 13397-32-5P 13397-33-6P 15782-66-8P
 28795-95-1P 87625-85-2P, Bicyclo[5.2.1]decane-2,6-dione
 133220-72-1P 272781-78-9P 274913-91-6P
 274913-92-7P 274913-93-8P 274913-94-9P
 276873-99-5P 276874-00-1P 276874-01-2P
 276874-02-3P 276874-03-4P 276874-04-5P
 276874-05-6P 276874-07-8P 276874-09-0P
 276874-11-4P 276874-12-5P 276874-14-7P
 276874-21-6P 276874-22-7P 276874-23-8P
 276874-25-0P 276874-26-1P 276874-29-4P
 276874-30-7P 276874-31-8P 276874-32-9P
 276874-33-0P 276874-34-1P 276874-35-2P

RL: IMF (Industrial manufacture); PREP (Preparation)
 (prepn. of org. compds. with imide catalysts)

RN 775-64-4 HCAPLUS
 CN Tricyclo[3.3.1.1^{3,7}]decane-1-methanol, .alpha.,.alpha.-dimethyl- (9CI)
 (CA INDEX NAME)

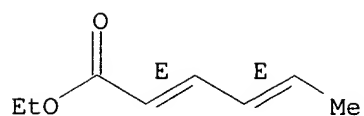


RN 1195-55-7 HCAPLUS
 CN 2(3H)-Furanone, dihydro-3-hydroxy-3,5,5-trimethyl- (9CI) (CA INDEX NAME)



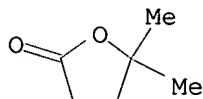
RN 2396-84-1 HCAPLUS
 CN 2,4-Hexadienoic acid, ethyl ester, (2E,4E)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



RN 3123-97-5 HCAPLUS

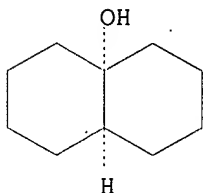
CN 2(3H)-Furanone, dihydro-5,5-dimethyl- (8CI, 9CI) (CA INDEX NAME)



RN 3574-58-1 HCAPLUS

CN 4a(2H)-Naphthalenol, octahydro-, cis- (9CI) (CA INDEX NAME)

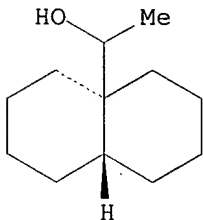
Relative stereochemistry.



RN 7775-55-5 HCAPLUS

CN 4a(2H)-Naphthalenemethanol, octahydro-.alpha.-methyl-, cis- (8CI, 9CI)
(CA INDEX NAME)

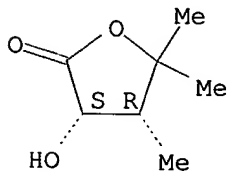
Relative stereochemistry.



RN 13397-32-5 HCAPLUS

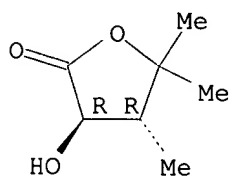
CN Pentonic acid, 3,5-dideoxy-3-methyl-4-C-methyl-, .gamma.-lactone (9CI)
(CA INDEX NAME)

Relative stereochemistry.

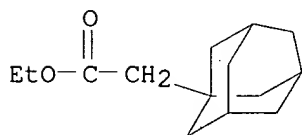


RN 13397-33-6 HCAPLUS
CN threo-Pentonic acid, 3,5-dideoxy-3-methyl-4-C-methyl-, .gamma.-lactone
(9CI) (CA INDEX NAME)

Relative stereochemistry.

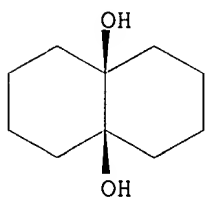


RN 15782-66-8 HCAPLUS
CN Tricyclo[3.3.1.1^{3,7}]decane-1-acetic acid, ethyl ester (9CI) (CA INDEX NAME)

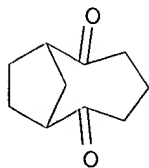


RN 28795-95-1 HCAPLUS
CN 4a,8a-Naphthalenediol, octahydro-, cis- (8CI, 9CI) (CA INDEX NAME)

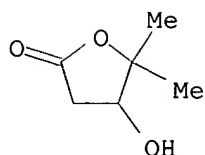
Relative stereochemistry.



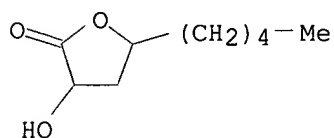
RN 87625-85-2 HCAPLUS
CN Bicyclo[5.2.1]decane-2,6-dione (9CI) (CA INDEX NAME)



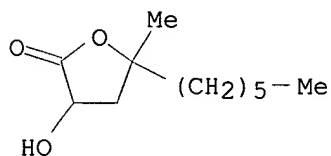
RN 133220-72-1 HCAPLUS
CN 2(3H)-Furanone, dihydro-4-hydroxy-5,5-dimethyl- (9CI) (CA INDEX NAME)



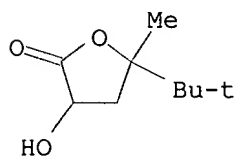
RN 272781-78-9 HCAPLUS
CN 2(3H)-Furanone, dihydro-3-hydroxy-5-pentyl- (9CI) (CA INDEX NAME)



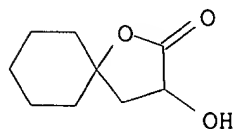
RN 274913-91-6 HCAPLUS
CN Pentonic acid, 3,5-dideoxy-4-C-hexyl-, .gamma.-lactone (9CI) (CA INDEX NAME)



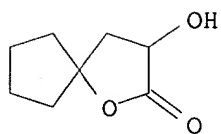
RN 274913-92-7 HCAPLUS
CN Pentonic acid, 3,5-dideoxy-4-C-(1,1-dimethylethyl)-, .gamma.-lactone (9CI) (CA INDEX NAME)



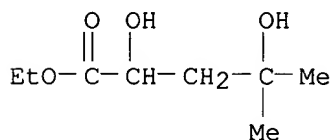
RN 274913-93-8 HCAPLUS
CN 1-Oxaspiro[4.5]decan-2-one, 3-hydroxy- (9CI) (CA INDEX NAME)



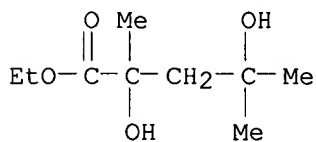
RN 274913-94-9 HCAPLUS
CN 1-Oxaspiro[4.4]nonan-2-one, 3-hydroxy- (9CI) (CA INDEX NAME)



RN 276873-99-5 HCAPLUS
 CN Pentanoic acid, 2,4-dihydroxy-4-methyl-, ethyl ester (9CI) (CA INDEX NAME)

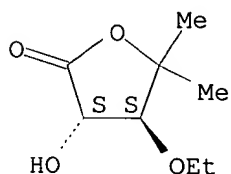


RN 276874-00-1 HCAPLUS
 CN Pentanoic acid, 2,4-dihydroxy-2,4-dimethyl-, ethyl ester (9CI) (CA INDEX NAME)



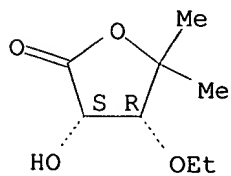
RN 276874-01-2 HCAPLUS
 CN threo-Pentonic acid, 5-deoxy-3-O-ethyl-4-C-methyl-, .gamma.-lactone (9CI) (CA INDEX NAME)

Relative stereochemistry.

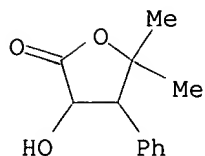


RN 276874-02-3 HCAPLUS
 CN erythro-Pentonic acid, 5-deoxy-3-O-ethyl-4-C-methyl-, .gamma.-lactone (9CI) (CA INDEX NAME)

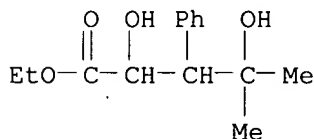
Relative stereochemistry.



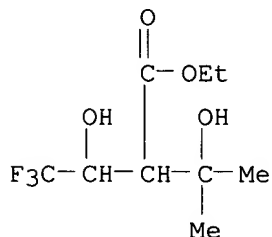
RN 276874-03-4 HCAPLUS

CN Pentonic acid, 3,5-dideoxy-4-C-methyl-3-phenyl-, .gamma.-lactone (9CI)
(CA INDEX NAME)

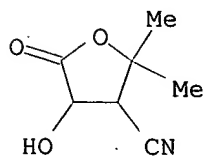
RN 276874-04-5 HCAPLUS

CN Pentonic acid, 3,5-dideoxy-4-C-methyl-3-phenyl-, ethyl ester (9CI) (CA
INDEX NAME)

RN 276874-05-6 HCAPLUS

CN Butanoic acid, 4,4,4-trifluoro-3-hydroxy-2-(1-hydroxy-1-methylethyl)-,
ethyl ester (9CI) (CA INDEX NAME)

RN 276874-07-8 HCAPLUS

CN Pentonic acid, 3-cyano-3,5-dideoxy-4-C-methyl-, .gamma.-lactone (9CI) (CA
INDEX NAME)

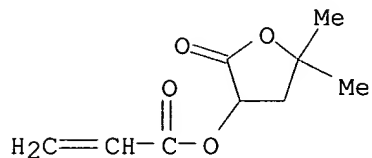
RN 276874-09-0 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1-tricyclo[3.3.1.1^{3,7}]dec-1-ylethyl ester,
polymer with tetrahydro-5,5-dimethyl-2-oxo-3-furanyl 2-propenoate (9CI)
(CA INDEX NAME)

CM 1

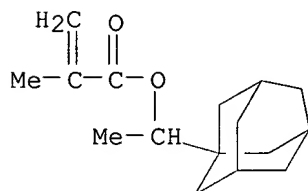
Solola 09/622,011

CRN 276874-08-9
CMF C9 H12 O4



CM 2

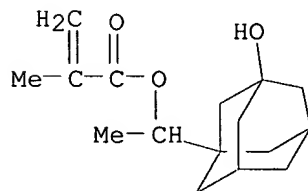
CRN 212580-04-6
CMF C16 H24 O2



RN 276874-11-4 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1-(3-hydroxytricyclo[3.3.1.13,7]dec-1-yl)ethyl ester, polymer with tetrahydro-5,5-dimethyl-2-oxo-3-furanyl 2-propenoate (9CI) (CA INDEX NAME)

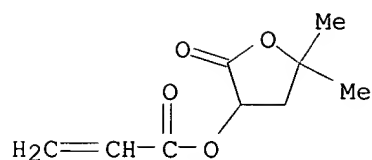
CM 1

CRN 276874-10-3
CMF C16 H24 O3



CM 2

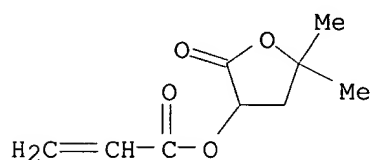
CRN 276874-08-9
CMF C9 H12 O4



RN 276874-12-5 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, 3-hydroxytricyclo[3.3.1.1.3,7]dec-1-yl ester,
 polymer with tetrahydro-5,5-dimethyl-2-oxo-3-furanyl 2-propenoate (9CI)
 (CA INDEX NAME)

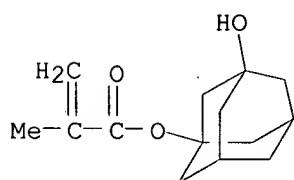
CM 1

CRN 276874-08-9
 CMF C9 H12 O4



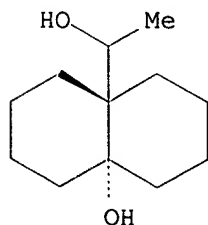
CM 2

CRN 115372-36-6
 CMF C14 H20 O3



RN 276874-14-7 HCAPLUS
 CN 4a(2H)-Naphthalenemethanol, octahydro-8a-hydroxy-.alpha.-methyl-, cis-
 (9CI) (CA INDEX NAME)

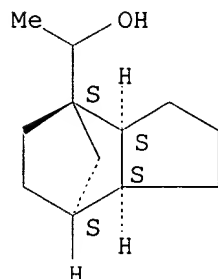
Relative stereochemistry.



RN 276874-21-6 HCAPLUS

CN 4,7-Methano-4H-indene-4-methanol, octahydro-.alpha.-methyl-,
(3aR,4R,7R,7aR)-rel- (9CI) (CA INDEX NAME)

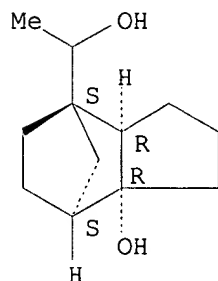
Relative stereochemistry.



RN 276874-22-7 HCAPLUS

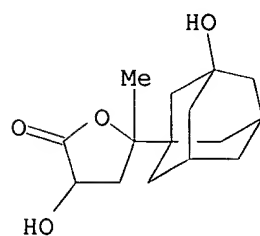
CN 4,7-Methano-4H-indene-4-methanol, octahydro-7a-hydroxy-.alpha.-methyl-,
(3aR,4S,7S,7aR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



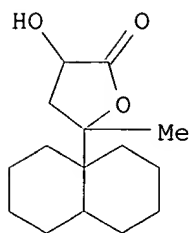
RN 276874-23-8 HCAPLUS

CN Pentonic acid, 3,5-dideoxy-4-C-(3-hydroxytricyclo[3.3.1.1.3,7]dec-1-yl)-,
.gamma.-lactone (9CI) (CA INDEX NAME)

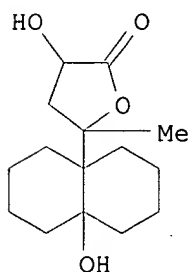


RN 276874-25-0 HCAPLUS

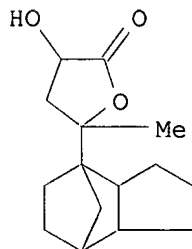
CN Pentonic acid, 3,5-dideoxy-4-C-(octahydro-4a(2H)-naphthalenyl)-,
.gamma.-lactone (9CI) (CA INDEX NAME)



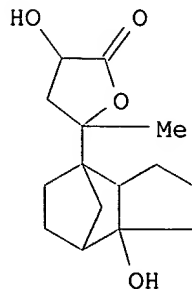
RN 276874-26-1 HCAPLUS
CN Pentonic acid, 3,5-dideoxy-4-C-(octahydro-8a-hydroxy-4a(2H)-naphthalenyl)-, .gamma.-lactone (9CI) (CA INDEX NAME)



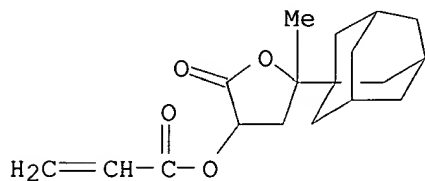
RN 276874-29-4 HCAPLUS
CN Pentonic acid, 3,5-dideoxy-4-C-(octahydro-4,7-methano-4H-inden-4-yl)-, .gamma.-lactone (9CI) (CA INDEX NAME)



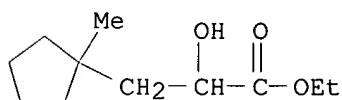
RN 276874-30-7 HCAPLUS
CN Pentonic acid, 3,5-dideoxy-4-C-(octahydro-7a-hydroxy-4,7-methano-4H-inden-4-yl)-, .gamma.-lactone (9CI) (CA INDEX NAME)



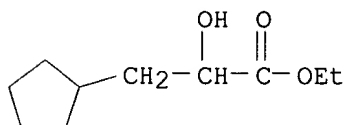
RN 276874-31-8 HCAPLUS
 CN Pentonic acid, 3,5-dideoxy-4-C-tricyclo[3.3.1.1³,7]dec-1-yl-,
 .gamma.-lactone, 2-(2-propenoate) (9CI) (CA INDEX NAME)



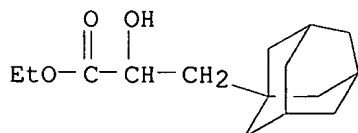
RN 276874-32-9 HCAPLUS
 CN Cyclopentanepropanoic acid, .alpha.-hydroxy-1-methyl-, ethyl ester (9CI)
 (CA INDEX NAME)



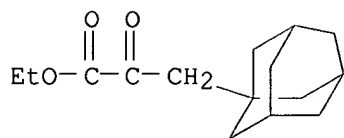
RN 276874-33-0 HCAPLUS
 CN Cyclopentanepropanoic acid, .alpha.-hydroxy-, ethyl ester (9CI) (CA INDEX NAME)



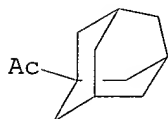
RN 276874-34-1 HCAPLUS
 CN Tricyclo[3.3.1.1³,7]decane-1-propanoic acid, .alpha.-hydroxy-, ethyl ester
 (9CI) (CA INDEX NAME)



RN 276874-35-2 HCAPLUS
 CN Tricyclo[3.3.1.1³,7]decane-1-propanoic acid, .alpha.-oxo-, ethyl ester
 (9CI) (CA INDEX NAME)

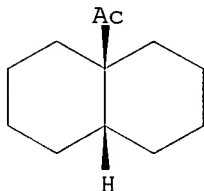


IT 1660-04-4P 5682-42-8P 13416-69-8P
 26750-08-3P 39917-38-9P 39917-40-3P
 276874-06-7P 276874-08-9P 276874-13-6P
 276874-15-8P 276874-16-9P 276874-24-9P
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
 (Reactant or reagent)
 (prepn. of org. compds. with **imide** catalysts)
 RN 1660-04-4 HCAPLUS
 CN Ethanone, 1-tricyclo[3.3.1.13,7]dec-1-yl- (9CI) (CA INDEX NAME)

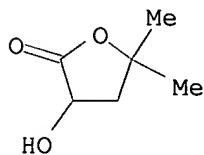


RN 5682-42-8 HCAPLUS
 CN Ethanone, 1-(cis-octahydro-4a(2H)-naphthalenyl)- (9CI) (CA INDEX NAME)

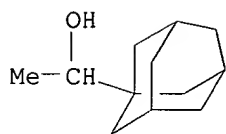
Relative stereochemistry.



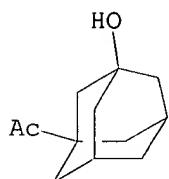
RN 13416-69-8 HCAPLUS
 CN 2(3H)-Furanone, dihydro-3-hydroxy-5,5-dimethyl- (9CI) (CA INDEX NAME)



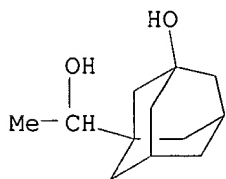
RN 26750-08-3 HCAPLUS
 CN Tricyclo[3.3.1.13,7]decane-1-methanol, .alpha.-methyl- (9CI) (CA INDEX NAME)



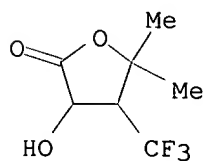
RN 39917-38-9 HCAPLUS
CN Ethanone, 1-(3-hydroxytricyclo[3.3.1.13,7]dec-1-yl)- (9CI) (CA INDEX NAME)



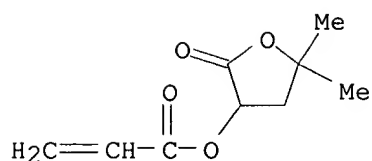
RN 39917-40-3 HCAPLUS
CN Tricyclo[3.3.1.13,7]decane-1-methanol, 3-hydroxy-.alpha.-methyl- (9CI) (CA INDEX NAME)



RN 276874-06-7 HCAPLUS
CN Pentonic acid, 3,5-dideoxy-4-C-methyl-3-(trifluoromethyl)-, .gamma.-lactone (9CI) (CA INDEX NAME)

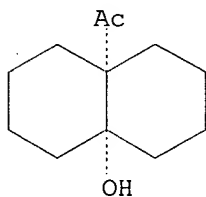


RN 276874-08-9 HCAPLUS
CN 2-Propenoic acid, tetrahydro-5,5-dimethyl-2-oxo-3-furanyl ester (9CI) (CA INDEX NAME)



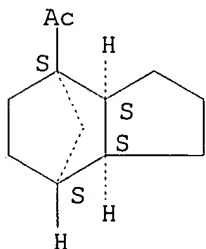
RN 276874-13-6 HCAPLUS
 CN Ethanone, 1-(cis-octahydro-8a-hydroxy-4a(2H)-naphthalenyl)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



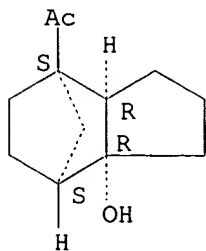
RN 276874-15-8 HCAPLUS
 CN Ethanone, 1-[(3aR,4R,7R,7aR)-octahydro-4,7-methano-4H-inden-4-yl]-, rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



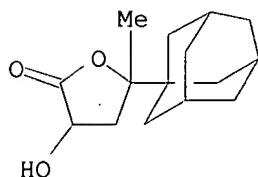
RN 276874-16-9 HCAPLUS
 CN Ethanone, 1-[(3aR,4S,7S,7aR)-octahydro-7a-hydroxy-4,7-methano-4H-inden-4-yl]-, rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 276874-24-9 HCAPLUS
 CN Pentonic acid, 3,5-dideoxy-4-C-tricyclo[3.3.1.1^{3,7}]dec-1-yl-,

.gamma.-lactone (9CI) (CA INDEX NAME)

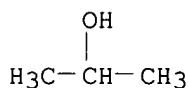


IT 67-63-0, Isopropanol, reactions 96-41-3, Cyclopentanol
 97-63-2 103-36-6, Ethyl cinnamate 111-27-3,
 1-Hexanol, reactions 123-96-6, 2-Octanol 140-88-5
 141-05-9, Diethyl maleate 281-23-2, Adamantane
 406-10-0 431-03-8, Biacetyl 464-07-3
 493-01-6, cis-Decalin 497-26-7, 2-Methyl-1,3-dioxolane
 623-91-6, Diethyl fumarate 646-06-0, 1,3-Dioxolane
 768-95-6, Tricyclo[3.3.1.1^{3,7}]decan-1-ol 814-68-6,
 2-Propenoyl chloride 2825-83-4 10544-63-5
 44653-08-9 92037-68-8 93430-22-9
 276874-27-2 276874-28-3

RL: RCT (Reactant); RACT (Reactant or reagent)
 (prepn. of org. compds. with **imide** catalysts)

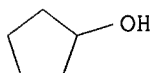
RN 67-63-0 HCAPLUS

CN 2-Propanol (9CI) (CA INDEX NAME)



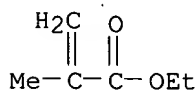
RN 96-41-3 HCAPLUS

CN Cyclopentanol (6CI, 8CI, 9CI) (CA INDEX NAME)



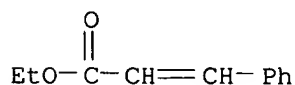
RN 97-63-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, ethyl ester (9CI) (CA INDEX NAME)

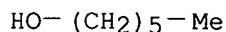


RN 103-36-6 HCAPLUS

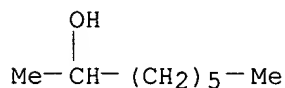
CN 2-Propenoic acid, 3-phenyl-, ethyl ester (9CI) (CA INDEX NAME)



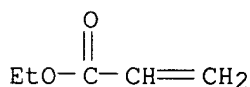
RN 111-27-3 HCAPLUS
CN 1-Hexanol (9CI) (CA INDEX NAME)



RN 123-96-6 HCAPLUS
CN 2-Octanol (8CI, 9CI) (CA INDEX NAME)

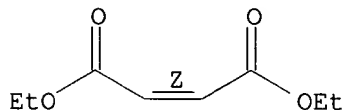


RN 140-88-5 HCAPLUS
CN 2-Propenoic acid, ethyl ester (9CI) (CA INDEX NAME)

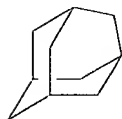


RN 141-05-9 HCAPLUS
CN 2-Butenedioic acid (2Z)-, diethyl ester (9CI) (CA INDEX NAME)

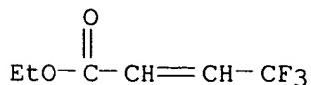
Double bond geometry as shown.



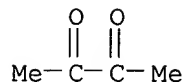
RN 281-23-2 HCAPLUS
CN Tricyclo[3.3.1.1^{3,7}]decane (9CI) (CA INDEX NAME)



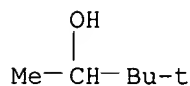
RN 406-10-0 HCAPLUS
CN 2-Butenoic acid, 4,4,4-trifluoro-, ethyl ester (9CI) (CA INDEX NAME)



RN 431-03-8 HCAPLUS
CN 2,3-Butanedione (8CI, 9CI) (CA INDEX NAME)

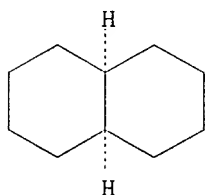


RN 464-07-3 HCAPLUS
CN 2-Butanol, 3,3-dimethyl- (7CI, 8CI, 9CI) (CA INDEX NAME)

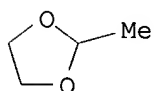


RN 493-01-6 HCAPLUS
CN Naphthalene, decahydro-, cis- (8CI, 9CI) (CA INDEX NAME)

Relative stereochemistry.

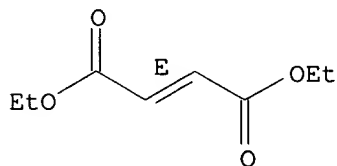


RN 497-26-7 HCAPLUS
CN 1,3-Dioxolane, 2-methyl- (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 623-91-6 HCAPLUS
CN 2-Butenedioic acid (2E)-, diethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



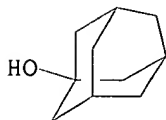
RN 646-06-0 HCAPLUS
CN 1,3-Dioxolane (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 768-95-6 HCAPLUS

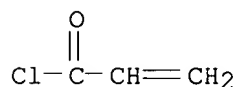
Solola 09/622,011

CN Tricyclo[3.3.1.1^{3,7}]decan-1-ol (9CI) (CA INDEX NAME)



RN 814-68-6 HCAPLUS

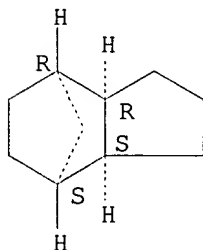
CN 2-Propenoyl chloride (9CI) (CA INDEX NAME)



RN 2825-83-4 HCAPLUS

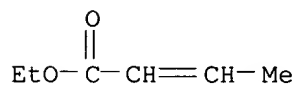
CN 4,7-Methano-1H-indene, octahydro-, (3aR,4R,7S,7aS)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



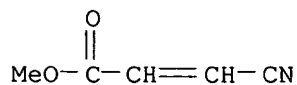
RN 10544-63-5 HCAPLUS

CN 2-Butenoic acid, ethyl ester (9CI) (CA INDEX NAME)



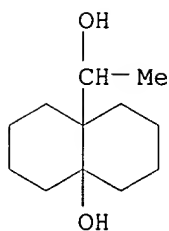
RN 44653-08-9 HCAPLUS

CN 2-Propenoic acid, 3-cyano-, methyl ester (9CI) (CA INDEX NAME)

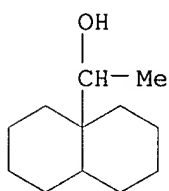


RN 92037-68-8 HCAPLUS

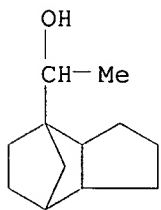
CN 4a(2H)-Naphthalenemethanol, octahydro-8a-hydroxy-.alpha.-methyl- (9CI) (CA INDEX NAME)



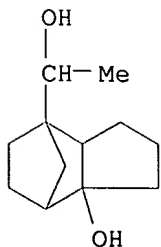
RN 93430-22-9 HCAPLUS
CN 4a(2H)-Naphthalenemethanol, octahydro-.alpha.-methyl- (6CI, 7CI, 9CI) (CA INDEX NAME)



RN 276874-27-2 HCAPLUS
CN 4,7-Methano-4H-indene-4-methanol, octahydro-.alpha.-methyl- (9CI) (CA INDEX NAME)



RN 276874-28-3 HCAPLUS
CN 4,7-Methano-4H-indene-4-methanol, octahydro-7a-hydroxy-.alpha.-methyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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L9 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2002 ACS

IC ICM C07B037-02

ICS C07B037-04; C07B041-00; C07C002-82; C07C013-615; C07C029-32;
C07C031-137; C07C067-333; C07C069-675; C07C069-716; C07C069-732;
C07D307-32; C07D317-30; C08F020-28; C08L033-14; B01J031-02

CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)

ST ethyl acrylate propanol reaction hydroxyphthalimide catalyst;
dihydroxymethylmetanate hydroxydimethylbutyrolactone prepn
hydroxyphthalimide catalyst; **imide** catalyst

IT Addition reaction catalysts
(prepn. of org. compds. with **imide** catalysts)

IT 524-38-9
RL: CAT (Catalyst use); USES (Uses)
(prepn. of org. compds. with **imide** catalysts)

IT 775-64-4P 1195-55-7P 2396-84-1P, Ethyl sorbate
3123-97-5P 3574-58-1P 7775-55-5P
13397-32-5P 13397-33-6P 15782-66-8P
28795-95-1P 87625-85-2P, Bicyclo[5.2.1]decane-2,6-dione
133220-72-1P 272781-78-9P 274913-91-6P
274913-92-7P 274913-93-8P 274913-94-9P
276873-99-5P 276874-00-1P 276874-01-2P
276874-02-3P 276874-03-4P 276874-04-5P
276874-05-6P 276874-07-8P 276874-09-0P
276874-11-4P 276874-12-5P 276874-14-7P
276874-21-6P 276874-22-7P 276874-23-8P
276874-25-0P 276874-26-1P 276874-29-4P
276874-30-7P 276874-31-8P 276874-32-9P
276874-33-0P 276874-34-1P 276874-35-2P
RL: IMF (Industrial manufacture); PREP (Preparation)
(prepn. of org. compds. with **imide** catalysts)

IT 1660-04-4P 5682-42-8P 13416-69-8P
26750-08-3P 39917-38-9P 39917-40-3P
276874-06-7P 276874-08-9P 276874-13-6P
276874-15-8P 276874-16-9P 276874-24-9P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
(Reactant or reagent)
(prepn. of org. compds. with **imide** catalysts)

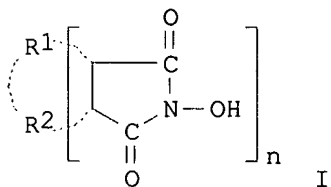
IT 67-63-0, Isopropanol, reactions 96-41-3, Cyclopentanol
97-63-2 103-36-6, Ethyl cinnamate 111-27-3,
1-Hexanol, reactions 123-96-6, 2-Octanol 140-88-5
141-05-9, Diethyl maleate 281-23-2, Adamantane
406-10-0 431-03-8, Biacetyl 464-07-3
493-01-6, cis-Decalin 497-26-7, 2-Methyl-1,3-dioxolane
623-91-6, Diethyl fumarate 646-06-0, 1,3-Dioxolane
768-95-6, Tricyclo[3.3.1.1^{3,7}]decan-1-ol 814-68-6,
2-Propenoyl chloride 2825-83-4 10544-63-5
44653-08-9 92037-68-8 93430-22-9
276874-27-2 276874-28-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of org. compds. with **imide** catalysts)

=> d ibib abs hitstr 2

L9 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2002 ACS
 ACCESSION NUMBER: 1999:431686 HCAPLUS
 DOCUMENT NUMBER: 131:93092
 TITLE: Method and regeneration of **imide catalysts**
 INVENTOR(S): Nakano, Tatsuya; Hirai, Shigehisa
 PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11188265	A2	19990713	JP 1997-359013	19971226

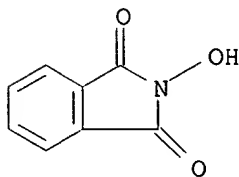
OTHER SOURCE(S): MARPAT 131:93092
 GI



AB The **imide** catalysts are represented by I (R1,2 = H, halo, alkyl, aryl, cycloalkyl, etc.; n = 1-3), and are reactivated by processing with hydroxylamine or an acid.

IT 524-38-9, N-Hydroxyphthalimide
 RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (method and regeneration of **imide**-based catalysts)

RN 524-38-9 HCAPLUS
 CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



IT 124-04-9, Adipic acid, uses 7803-49-8, Hydroxylamine, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (method and regeneration of **imide**-based catalysts)

RN 124-04-9 HCAPLUS
 CN Hexanedioic acid (9CI) (CA INDEX NAME)

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$\text{HO}_2\text{C}-(\text{CH}_2)_4-\text{CO}_2\text{H}$

RN 7803-49-8 HCAPLUS

CN Hydroxylamine (8CI, 9CI) (CA INDEX NAME)

$\text{H}_2\text{N}-\text{OH}$

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L9 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2002 ACS
IC ICM B01J031-18
ICS B01J031-40; B01J038-12; C07B041-08; C07B043-02
CC 67-1 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
ST **imide** catalyst regeneration prodn
IT Catalysts
 (method and regeneration of **imide**-based catalysts)
IT **524-38-9**, N-Hydroxyphthalimide
 RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process);
 PROC (Process); USES (Uses)
 (method and regeneration of **imide**-based catalysts)
IT **124-04-9**, Adipic acid, uses **7803-49-8**, Hydroxylamine,
 uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (method and regeneration of **imide**-based catalysts)

=> d ibib abs hitstr 3

L9 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1998:760025 HCAPLUS

DOCUMENT NUMBER: 129:331158

TITLE: Process and **imide catalysts** for the oxidation of nonaromatic ethers to esters or anhydrides

INVENTOR(S): Ishii, Yasutaka; Nakano, Tatsuya

PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan

SOURCE: Eur. Pat. Appl., 12 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

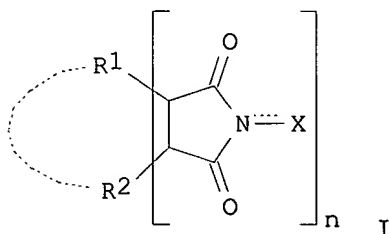
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 878458	A1	19981118	EP 1998-108533	19980511
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 10316610	A2	19981202	JP 1997-122526	19970513
US 6037477	A	20000314	US 1998-74604	19980508
PRIORITY APPLN. INFO.:			JP 1997-122526	19970513
OTHER SOURCE(S):			MARPAT 129:331158	

GI

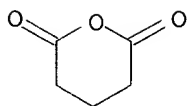


AB Linear or cyclic nonarom. ethers (e.g., phthalide) are oxidized with oxygen in the presence of an **imide** oxidn. catalyst [I; R1, R2 = H, halogen, alkyl, aryl, cycloalkyl, OH, alkoxy carbonyl, acyl; n = 1-3; X = O, OH; R1R2 = double bond or (non)arom. ring moiety] and an optional cocatalyst (e.g., a transition metal compd.) to produce the corresponding chain or cyclic ester or anhydride in high yield and selectivity. Thus, phthalide was oxidized in PhCN in the presence of 2 mol % N-hydroxyphthalimide with O₂(g) at 100.degree., producing phthalic anhydride in 46% yield.

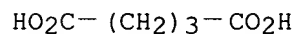
IT **108-55-4P**, Glutaric anhydride **110-94-1P**, Glutaric acid
 RL: BYP (Byproduct); PREP (Preparation)
 (process and **imide** catalysts for the oxidn. of nonarom. ethers to esters or anhydrides)

RN 108-55-4 HCAPLUS

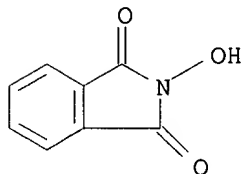
CN 2H-Pyran-2,6(3H)-dione, dihydro- (9CI) (CA INDEX NAME)



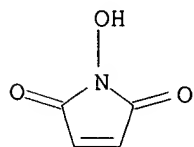
RN 110-94-1 HCAPLUS
CN Pentanedioic acid (9CI) (CA INDEX NAME)



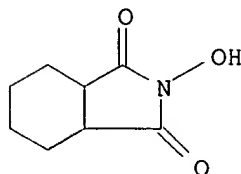
IT 524-38-9, N-Hydroxyphthalimide 4814-74-8,
N-Hydroxymaleimide 5426-10-8, N-Hydroxyhexahydrophthalimide
6066-82-6, N-Hydroxysuccinimide 16626-06-5
57583-53-6, N,N'-Dihydroxypyromellitimide 85342-65-0,
N-Hydroxytetrachlorophthalimide 110167-77-6 137373-35-4
142109-85-1, N-Hydroxytetrabromophthalimide 213274-94-3
215175-29-4
RL: CAT (Catalyst use); USES (Uses)
(process and imide catalysts for the oxidn. of nonarom.
ethers to esters or anhydrides)
RN 524-38-9 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, 2-hydroxy- (9CI) (CA INDEX NAME)



RN 4814-74-8 HCAPLUS
CN 1H-Pyrrole-2,5-dione, 1-hydroxy- (9CI) (CA INDEX NAME)



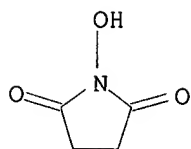
RN 5426-10-8 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, hexahydro-2-hydroxy- (9CI) (CA INDEX NAME)



RN 6066-82-6 HCAPLUS

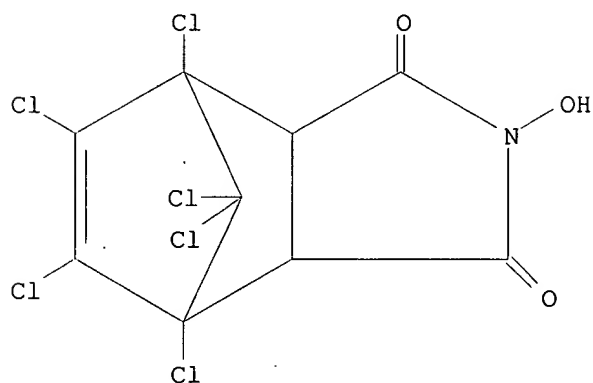
Solola 09/622,011

CN 2,5-Pyrrolidinedione, 1-hydroxy- (9CI) (CA INDEX NAME)



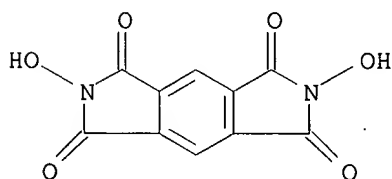
RN 16626-06-5 HCAPLUS

CN 4,7-Methano-1H-isoindole-1,3(2H)-dione, 4,5,6,7,8,8-hexachloro-3a,4,7,7a-tetrahydro-2-hydroxy- (9CI) (CA INDEX NAME)



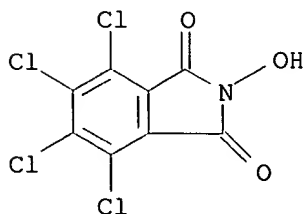
RN 57583-53-6 HCAPLUS

CN Benzo[1,2-c:4,5-c']dipyrrole-1,3,5,7(2H,6H)-tetrone, 2,6-dihydroxy- (9CI) (CA INDEX NAME)



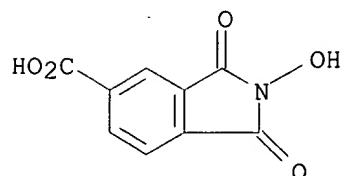
RN 85342-65-0 HCAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 4,5,6,7-tetrachloro-2-hydroxy- (9CI) (CA INDEX NAME)

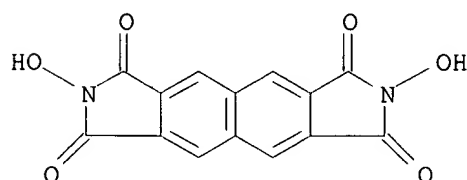


RN 110167-77-6 HCAPLUS

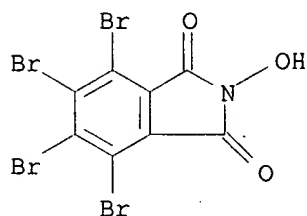
CN 1H-Isoindole-5-carboxylic acid, 2,3-dihydro-2-hydroxy-1,3-dioxo- (9CI)
(CA INDEX NAME)



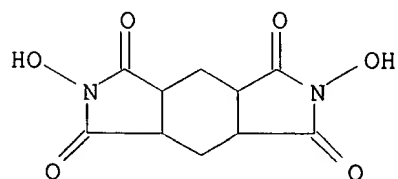
RN 137373-35-4 HCAPLUS
CN Isoindolo[5,6-f]isoindole-1,3,6,8(2H,7H)-tetrone, 2,7-dihydroxy- (9CI)
(CA INDEX NAME)



RN 142109-85-1 HCAPLUS
CN 1H-Isoindole-1,3(2H)-dione, 4,5,6,7-tetrabromo-2-hydroxy- (9CI) (CA INDEX NAME)

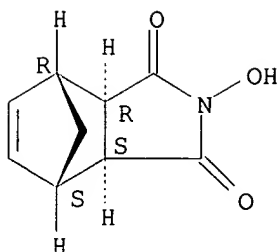


RN 213274-94-3 HCAPLUS
CN Benzo[1,2-c:4,5-c']dipyrrole-1,3,5,7(2H,6H)-tetrone, hexahydro-2,6-dihydroxy- (9CI) (CA INDEX NAME)

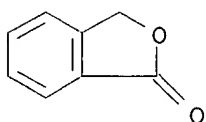


RN 215175-29-4 HCAPLUS
CN 4,7-Methano-1H-isoindole-1,3(2H)-dione, 3a,4,7,7a-tetrahydro-2-hydroxy-, (3aR,4R,7S,7aS)- (9CI) (CA INDEX NAME)

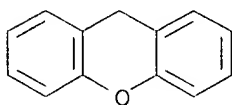
Absolute stereochemistry.



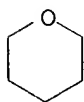
IT 87-41-2, Phthalide 92-83-1, Xanthene 142-68-7,
Tetrahydropyran 493-05-0, Isochroman 538-86-3, Benzyl
methyl ether 592-90-5, Oxepane 629-64-1, Diheptyl
ether
RL: RCT (Reactant)
(process and imide catalysts for the oxidn. of nonarom.
ethers to esters or anhydrides)
RN 87-41-2 HCAPLUS
CN 1(3H)-Isobenzofuranone (9CI) (CA INDEX NAME)



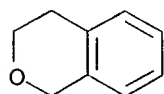
RN 92-83-1 HCAPLUS
CN 9H-Xanthene (9CI) (CA INDEX NAME)



RN 142-68-7 HCAPLUS
CN 2H-Pyran, tetrahydro- (8CI, 9CI) (CA INDEX NAME)



RN 493-05-0 HCAPLUS
CN 1H-2-Benzopyran, 3,4-dihydro- (9CI) (CA INDEX NAME)



RN 538-86-3 HCAPLUS

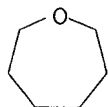
Solola 09/622,011

CN Benzene, (methoxymethyl)- (9CI) (CA INDEX NAME)

MeO-CH₂-Ph

RN 592-90-5 HCAPLUS

CN Oxepane (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 629-64-1 HCAPLUS

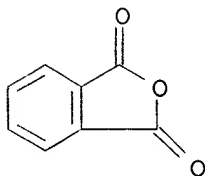
CN Heptane, 1,1'-oxybis- (9CI) (CA INDEX NAME)

Me-(CH₂)₆-O-(CH₂)₆-Me

IT 85-44-9P, 1,3-Isobenzofurandione 90-47-1P, 9-Oxoxanthene
93-58-3P, Methyl benzoate 491-31-6P, Isocoumarin
502-44-3P, .epsilon.-Caprolactone 542-28-9P,
.delta.-Valerolactone 624-09-9P, Heptyl heptanoate
RL: SPN (Synthetic preparation); PREP (Preparation)
(process and imide catalysts for the oxidn. of nonarom.
ethers to esters or anhydrides)

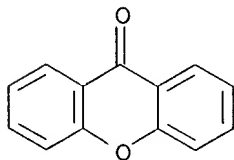
RN 85-44-9 HCAPLUS

CN 1,3-Isobenzofurandione (9CI) (CA INDEX NAME)



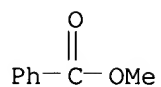
RN 90-47-1 HCAPLUS

CN 9H-Xanthen-9-one (9CI) (CA INDEX NAME)

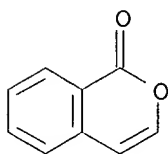


RN 93-58-3 HCAPLUS

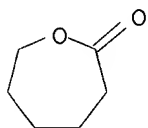
CN Benzoic acid, methyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



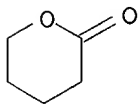
RN 491-31-6 HCAPLUS
CN 1H-2-Benzopyran-1-one (9CI) (CA INDEX NAME)



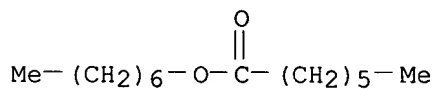
RN 502-44-3 HCAPLUS
CN 2-Oxepanone (8CI, 9CI) (CA INDEX NAME)



RN 542-28-9 HCAPLUS
CN 2H-Pyran-2-one, tetrahydro- (8CI, 9CI) (CA INDEX NAME)



RN 624-09-9 HCAPLUS
CN Heptanoic acid, heptyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



Science Text 0
2
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TEXT

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=> d ibib abs 1

L18 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:517641 HCAPLUS
DOCUMENT NUMBER: 135:92372
TITLE: Process for the preparation of .beta.-
acyloxy-carboxylic acids and acyloxyketones
INVENTOR(S): Ishii, Yasutaka; Nakano, Tatsuya
PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2001192354	A2	20010717	JP 2000-648	20000106

OTHER SOURCE(S): CASREACT 135:92372; MARPAT 135:92372
AB The title compds. R5COOC(R1)(R2)C(R3)(R4)COY [R1, R2 = H, org.
substituent; further detail on R1 and R2 is given; R3, R4 = H, org.
substituent; R5 = H, hydrocarbon, etc.; Y = OH, etc.], useful as
intermediates for pharmaceuticals and agrochems., are prepd. by reaction
of alcs. with .alpha., .beta.-unsatd. carbonyl compds. in the presence of
an **imide catalyst** and oxygen. Thus, a mixt. of Me
vinyl ketone, 2-propanol, N-hydroxyphthalimide, cobalt (II) acetate, and
cobalt (III) acetylacetonate in acetonitrile was stirred at 50.degree.
under oxygen for 9 h to give 3-acetoxy-3-methylbutanoic acid in 40% yield.

=> d ind

L18 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2002 ACS
IC ICM C07C067-42
ICS B01J031-02; C07C067-44; C07C069-06; C07C069-14; C07D307-20;
C07B041-12; C07B061-00
CC 23-16 (Aliphatic Compounds)
Section cross-reference(s): 1, 5
ST acyloxy-carboxylate acyloxyketone prepn; alc reaction unsatd carbonyl compd
oxygen; unsatd carbonyl compd reaction alc oxygen
IT **Addition reaction**
(addn. reaction of alcs. with .alpha., .beta.-unsatd. carbonyl compds.
in presence of imide and oxygen)
IT **Addition reaction catalysts**
(**imide** and cobalt compds. in oxidative **addn.**
reaction of alcs. with **unsatd** carbonyl compds.)
IT Carboxylic acids, preparation
Ketones, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(process for the prepn. of .beta.-acyloxy-carboxylic acids and
acyloxyketones)
IT 71-48-7, Cobalt(II) acetate 524-38-9, N-Hydroxyphthalimide 21679-46-9,
Cobalt (III) acetylacetonate
RL: CAT (Catalyst use); USES (Uses)
(process for the prepn. of .beta.-acyloxy-carboxylic acids and
acyloxyketones)
IT 67-63-0P, 2-Propanol, preparation 78-94-4P, Methyl vinyl ketone,
preparation 107-02-8P, Acrolein, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic

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preparation); PREP (Preparation); RACT (Reactant or reagent)
(process for the prepn. of .beta.-acyloxy-carboxylic acids and
acyloxyketones)

IT 44983-17-7P 349484-03-3P 349484-04-4P 349484-05-5P

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP
(Preparation)

(process for the prepn. of .beta.-acyloxy-carboxylic acids and
acyloxyketones)

=> d ibib abs 2

L18 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:862811 HCAPLUS

DOCUMENT NUMBER: 134:222259

TITLE: N-Hydroxyphthalimide-catalyzed radical addition of 1,3-dioxolanes and molecular oxygen to alkenes under ambient conditions: a new route to .beta.-oxy carbonyl compounds

AUTHOR(S): Hirano, Kazutaka; Iwahama, Takahiro; Sakaguchi, Satoshi; Ishii, Yasutaka

CORPORATE SOURCE: Department of Applied Chemistry, Faculty of Engineering & High Technology Research Center, Kansai University, Suita, Osaka, 564-8680, Japan

SOURCE: Chemical Communications (Cambridge) (2000), (24), 2457-2458

CODEN: CHCOFS; ISSN: 1359-7345

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A novel catalytic hydroxyacylation of alkenes using 1,3-dioxolanes and mol. oxygen was developed, and the reaction of 2-methyl-1,3-dioxolane with Me acrylate under dioxygen atm. in the presence of catalytic amts. of N-hydroxyphthalimide and Co(OAc)₂ produced the corresponding adduct in 81% yield. To a soln. of 2-methyl-1,3-dioxolane (15 mmol), N-hydroxyphthalimide (0.15 mmol) and cobalt diacetate (0.0015 mmol) in a two-neck flask equipped with a balloon filled with oxygen (1 atm) was added Me acrylate (3 mmol). The mixt. was vigorously stirred at room temp. for 3 h. The recovery of unreacted 2-methyl-1,3-dioxolane, followed by flash chromatog. on silica gel afforded .alpha.-hydroxy-2-methyl-1,3-dioxolane-2-propanoic acid Me ester. Deprotection of the latter gave 2-hydroxy-4-oxopentanoic acid Me ester in quant. yield.

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d ibib abs 3

L18 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2002 ACS
 ACCESSION NUMBER: 1999:577448 HCAPLUS
 DOCUMENT NUMBER: 131:299140
 TITLE: Asymmetric Synthesis of .beta.-Amino Acid Derivatives
 via Catalytic Conjugate **Addition** of
 Hydrazoic Acid to **Unsaturated** Imides
 AUTHOR(S): Myers, Jason K.; Jacobsen, Eric N.
 CORPORATE SOURCE: Department of Chemistry and Chemical Biology, Harvard
 University, Cambridge, MA, USA
 SOURCE: J. Am. Chem. Soc. (1999), 121(38), 8959-8960
 CODEN: JACSAT; ISSN: 0002-7863
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 131:299140
 GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB A highly enantioselective conjugate addn. of hydrazoic acid to
 .alpha.,.beta.-unsatd. imides, e.g., I and II, to give chiral .beta.-azido
 imides, e.g., III and IV, catalyzed by readily available chiral
 (salen)Al(III) complexes (R,R)- and (S,S)-V (M = AlN3, AlMe) is reported.
 REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d ind 3

L18 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2002 ACS
 CC 21-2 (General Organic Chemistry)
 ST **catalyst** conjugate **addn** hydrazoic acid **unsatd**
imide; salen aluminum complex catalyst conjugate addn; asym
 conjugate addn catalyst; azido imide catalyzed stereoselective prepn
 IT Asymmetric synthesis and induction
 (asym. synthesis of .beta.-azido imides via catalytic conjugate
addn. of hydrazoic acid to **unsatd.** imides)
 IT **Addition reaction**
 (conjugate, stereoselective; asym. synthesis of .beta.-azido imides via
 catalytic conjugate **addn.** of hydrazoic acid to **unsatd**
 . imides)
 IT **Addition reaction catalysts**
 (stereoselective; asym. synthesis of .beta.-azido **imides** via
 catalytic conjugate **addn.** of hydrazoic acid to **unsatd**
 . **imides**)
 IT Imides
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (unsatd.; asym. synthesis of .beta.-azido imides via catalytic
 conjugate **addn.** of hydrazoic acid to **unsatd.**
 imides)
 IT 247120-42-9P 247130-36-5P 247130-51-4P 247130-53-6P
 RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
 USES (Uses)
 (asym. synthesis of .beta.-azido imides via catalytic conjugate

addn. of hydrazoic acid to **unsatd.** imides)

IT 55-21-0, Benzamide 75-07-0, Acetaldehyde, reactions 78-84-2,
 2-Methylpropanal 100-52-7, Benzaldehyde, reactions 122-78-1,
 Benzeneacetaldehyde 123-38-6, Propanal, reactions 123-72-8, Butanal
 128-53-0 630-19-3, 2,2-Dimethylpropanal 3095-95-2, Diethyl
 phosphonoacetic acid 7782-79-8, Hydrazoic acid 23350-58-5, Crotonamide
 38902-81-7, N-Methylcrotonamide 60656-87-3, (Benzyloxy)acetaldehyde
 123492-60-4 135616-36-3 135616-40-9 247043-57-8
 RL: RCT (Reactant)
 (asym. synthesis of .beta.-azido imides via catalytic conjugate
 addn. of hydrazoic acid to **unsatd.** imides)

IT 893-40-3P 54572-21-3P 247043-58-9P 247043-59-0P 247043-63-6P
 247043-64-7P 247043-65-8P 247043-66-9P 247043-67-0P 247043-68-1P
 247043-69-2P 247043-78-3P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (asym. synthesis of .beta.-azido imides via catalytic conjugate
 addn. of hydrazoic acid to **unsatd.** imides)

IT 159991-23-8P 247043-55-6P 247043-56-7P 247043-60-3P 247043-61-4P
 247043-62-5P 247043-70-5P 247043-71-6P 247043-72-7P 247043-73-8P
 247043-74-9P 247043-75-0P 247043-77-2P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (asym. synthesis of .beta.-azido imides via catalytic conjugate
 addn. of hydrazoic acid to **unsatd.** imides)

TEXT

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=> d bib abs

L27 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2002 ACS
AN 1985:504217 HCAPLUS
DN 103:104217
TI Addition of acetaldehyde to ethylene in the presence of complex catalysts
AU Gvozдовskii, G. N.; Koshelev, Yu. N.; Tarasov, B. P.; Marakaev, T. A.;
Devekki, A. V.
CS VNIINeftekhim., Leningrad, USSR
SO Neftekhimiya (1985), 25(2), 218-23
CODEN: NEFTAH; ISSN: 0028-2421
DT Journal
LA Russian
AB The title reaction was studied in HOAc in the presence of Co(OAc)₂, KBr,
and N-bromosuccinimide. The catalytic components existed as a mixt. of
binary complexes. The role of O₂ was discussed. The rate consts. (log k)
for addn. of AcH to RCH:CH₂ (R = H, Me, Et, Bu) were linearly correlated
with the steric consts. (Es) of R.

=> d ind

L27 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2002 ACS
 CC 22-4 (Physical Organic Chemistry)
 ST **addn acetaldehyde olefin** cobalt bromide;
 bromosuccinimide cobalt bromide addn olefin; steric effect **addn**
acetaldehyde olefin
 IT Addition reaction **catalysts**
 (cobalt acetate-potassium bromide-bromosuccinimide, for
 acetaldehyde with olefins)
 IT Steric effect
 (in **addn.** reaction of **acetaldehyde** with
olefins)
 IT Kinetics of **addition** reaction
 (of **acetaldehyde** with **olefins**)
 IT 74-85-1, reactions 106-98-9, reactions 115-07-1, reactions 592-41-6,
 reactions
 RL: RCT (Reactant)
 (addn. reaction of, with acetaldehyde, kinetics of)
 IT 75-07-0, reactions
 RL: RCT (Reactant)
 (addn. reaction of, with olefins, kinetics of)
 IT 71-48-7 128-08-5 7758-02-3, uses and miscellaneous
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts contg., for **addn.** reaction of **acetaldehyde**
 with **olefins**)

TEXT

Solola 09/622,011

=> d bib abs 1

L38 ANSWER 1 OF 13 HCAPLUS COPYRIGHT 2002 ACS
AN 1996:496128 HCAPLUS
DN 125:143437
TI Behavior of interfacial polycondensation on synthesizing of poly(amic ester)s
AU Chern, Yaw-Terng; Wu, Bae-Shyang
CS Institute of Chemical Engineering, National Taiwan Institute of Technology, Taipei, 106, Taiwan
SO J. Appl. Polym. Sci. (1996), 61(11), 1853-1863
CODEN: JAPNAB; ISSN: 0021-8995
DT Journal
LA English
AB The behavior in interfacial polycondensation of 4,4'-methylenedianiline or 4,4'-oxydianiline (ODA) in water with **dimethoxycarbonyl** terephthaloyl chloride (DCMTC) in dichloromethane with benzyltriethylammonium chloride (BTEAC) as a catalyst was examd. with a FTIR spectrophotometer, attenuated total reflectance, an UV spectrophotometer, and SEM. When the ratio of the DCMTC concns. to the ODA concn. was about 2:1, the interfacial polymer obtained had relatively high inherent viscosity. With the **addn.** of a suitable amt. of sodium carbonate and BTEAC, the interfacial polymer obtained had relatively high inherent viscosity. The polymer film grew toward the org. phase from the interface region until the reaction was over. The surfaces of the films adjacent to the water phases were composed of the polymer having a higher mol. wt. and were denser in morphol. than those of the films adjacent to the org. phase.

=> d bib abs 2

L38 ANSWER 2 OF 13 HCAPLUS COPYRIGHT 2002 ACS

AN 1996:242782 HCAPLUS

DN 125:10264

TI Trimethylsilyl bis(fluorosulfonyl)**imide**: an efficient
catalyst for the **addition** of trimethylsilyl cyanide to
carbonyl compounds

AU Kaur, Harpinder; Kaur, Gurmeet; Trehan, Sanjay

CS Dep. Chemistry, Panjab Univ., Chandigarh, 160014, India

SO Synth. Commun. (1996), 26(10), 1925-9

CODEN: SYNCAV; ISSN: 0039-7911

DT Journal

LA English

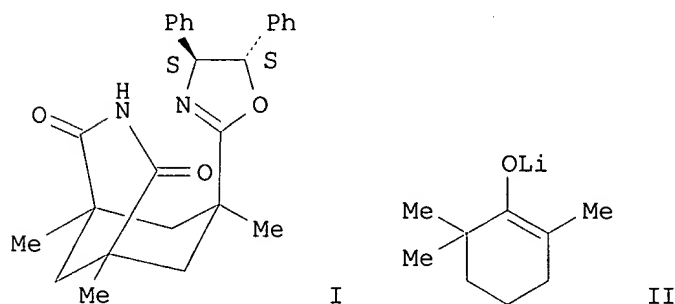
AB In the presence of 1 mol% of trimethylsilyl bis(fluorosulfonyl)imide,
trimethylsilyl cyanide adds efficiently to carbonyl compds. The catalyst
has been found to be more active than trimethylsilyl triflate for the
above reaction.

=> d bib abs 3

L38 ANSWER 3 OF 13 HCAPLUS COPYRIGHT 2002 ACS
AN 1996:185929 HCAPLUS
DN 124:316201
TI Bis(fluorosulfonyl)imide: a Broensted acid **catalyst**
for the **addition** of allyltrimethylsilane to **carbonyl**
compounds
AU Kaur, Gurmeet; Manju, Kavita; Trehan, Sanjay
CS Dep. Chemistry, Panjab Univ., Chandigarh, 160 014, India
SO Chem. Commun. (Cambridge) (1996), (5), 581-2
CODEN: CHCOFS; ISSN: 1359-7345
DT Journal
LA English
AB The Broensted acid $\text{HN}(\text{SO}_2\text{F})_2$ catalyzes the **addn.** of
allyltrimethylsilane to **carbonyl** compds. to give the
corresponding homoallylic **alcs.** in high yields.

=> d bib abs 4

L38 ANSWER 4 OF 13 HCAPLUS COPYRIGHT 2002 ACS
 AN 1995:539746 HCAPLUS
 DN 123:285291
 TI Catalytic enantioselective protonation of simple enolate with chiral imide
 AU Yanagisawa, Akira; Kikuchi, Tetsuo; Watanabe, Tsuyoshi; Kuribayashi, Takeshi; Yamamoto, Hisashi
 CS School of Engineering, Nagoya Univ., Nagoya, 464-01, Japan
 SO Synlett (1995), (4), 372-4
 CODEN: SYNLES; ISSN: 0936-5214
 DT Journal
 LA English
 OS CASREACT 123:285291
 GI



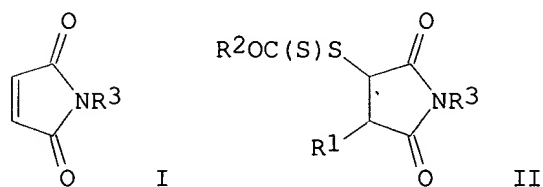
AB The catalytic enantioselective protonation of simple enolate was achieved using chiral proton source (S,S)-imide I, which possesses an asym. 2-oxazoline ring, as a catalyst. Treatment of the lithium enolate II with (S,S)-imide I (0.1 equiv) followed by **addn.** of bulky phenol deriv. or **.beta.-diketone** as achiral proton source (1 equiv) afforded (R)-2,2,6-trimethylcyclohexanone with high enantioselectivity.

=> d bib abs 5

L38 ANSWER 5 OF 13 HCAPLUS COPYRIGHT 2002 ACS
AN 1992:84874 HCAPLUS
DN 116:84874
TI Studies on curing of maleimide resins. V. High-resolution solid-state carbon-13 NMR study on the curing reaction of maleimide-epoxy resin blends
AU Shibahara, Sumio; Enoki, Takashi
CS Sumibe Techno Res. Co., Ltd., Yokohama, 245, Japan
SO Netsu Kokasei Jushi (1991), 12(2), 82-9
CODEN: NKJUDH; ISSN: 0388-4384
DT Journal
LA Japanese
AB Solid-state CP/MAS (cross polarization/magic angle spinning)-13C-NMR spectrometry was applied to the anal. of the curing reaction of blends of a polyimide (prepd. from bismaleimide and arom. diamine) and an epoxy resin. In the NMR spectra of polyimide-epoxy resin blends, the peak at 170 ppm was attributed to conjugated **carbonyl** C of unreacted maleimide groups, and the peak at 176 ppm was attributed to nonconjugated **carbonyl** C of the reacted maleimide groups. The peak at 52 ppm was caused by methyne C of the epoxy groups. The reaction process of maleimide groups and epoxy groups could be followed by estg. the relative intensity of the 3 peaks. In the curing reaction of **polyimide**-epoxy resin blend without **catalyst**, the **addn.** reaction of amino groups to epoxy groups proceeded mainly, and the reaction of maleimide groups proceeded slowly at 170.degree.. Polymn. of maleimide groups and the **addn.** reaction of secondary amine to epoxy group took place by postcuring at 200.degree.. Polymn. of maleimide groups proceeded rapidly in the presence of an imidazole catalyst while polymn. of epoxy groups hardly proceeded at 170.degree., but proceeded by postcuring at 200.degree..

=> d bib abs 6

L38 ANSWER 6 OF 13 HCAPLUS COPYRIGHT 2002 ACS
 AN 1989:477791 HCAPLUS
 DN 111:77791
 TI Xanthates as a source of stabilized carbon centered radicals using visible light
 AU Mestre, Francois; Tailhan, Catherine; Zard, Samir Z.
 CS Lab. Synth. Org., Ec. Polytech., Palaiseau, 91128, Fr.
 SO Heterocycles (1989), 28(1), 171-4
 CODEN: HTCYAM; ISSN: 0385-5414
 DT Journal
 LA English
 OS CASREACT 111:77791
 GI



AB The PhCH₂SC(S)OEt-catalyzed reaction of R₁SC(S)OR₂ (R₁ = PhCH₂, substituted benzyl, allyl, thenyl; R₂ = Me, Et) with maleimides I (R₃ = Me, PhCH₂) gave succinimides II. Allyl acetate and R₄COCH₂SC(S)OR₅ (R₄ = Ph, Me; R₅ = Me, Et) gave R₄COCH₂CH₂CH[SC(S)OR₅]CH₂OAc.

=> d bib abs 7

L38 ANSWER 7 OF 13 HCAPLUS COPYRIGHT 2002 ACS

AN 1989:211819 HCAPLUS

DN 110:211819

TI Coordination and catalytic reactions of unsaturated compounds. V.
Mechanism of the synergetic catalytic **addition** of
acetaldehyde to ethylene

AU Devekki, A. V.; Tarasov, B. P.; Marakaev, T. A.

CS VNII Neftekhim. Procs., Leningrad, USSR

SO Zh. Org. Khim. (1988), 24(10), 2056-65

CODEN: ZORKAE; ISSN: 0514-7492

DT Journal

LA Russian

AB In the presence of Co acetate, KBr, and N-bromosuccinimide, the reaction of AcH with C₂H₄ proceeds by radical and cation-radical mechanisms. The electron-transfer steps are described, and the effect of Zr⁴⁺ is examd. The synergetic effect of the above reagents is discussed in terms of the contribution of interrelated radical paths. Cleavage of the Ac-H bond is the rate-detg. step. The effect of the redox potential of the metal ion on the rate of electron transfer from the substrate is discussed.

=> d ind 7

- L38 ANSWER 7 OF 13 HCAPLUS COPYRIGHT 2002 ACS
- CC 22-4 (Physical Organic Chemistry)
- ST **addn acetaldehyde** ethene synergetic catalyst; cobalt
bromide **bromosuccinimide** synergetic **catalyst**; electron
transfer **addn acetaldehyde** ethene
- IT **Addition** reaction catalysts
(cobalt-bromide-bromosuccinimide, for **acetaldehyde** with
ethene, synergetic effect in)
- IT Electron exchange
(in **addn.** reaction of **acetaldehyde** with ethene)
- IT **Addition** reaction
(of **acetaldehyde** with ethene, mechanism of catalytic)
- IT Electric potential
(redox, of metal ions, catalytic activity in **acetaldehyde**
addn. to ethene in relation to)
- IT Cooperative phenomena
(synergism, in catalytic **addn.** reaction of
acetaldehyde with ethene)
- IT 74-85-1, Ethene, reactions
RL: RCT (Reactant)
(**addn.** reaction of, with **acetaldehyde**, synergetic
catalytic effect in)
- IT 75-07-0, **Acetaldehyde**, reactions
RL: RCT (Reactant)
(**addn.** reaction of, with ethylene, synergetic catalytic
effect in)
- IT 71-48-7, Cobalt diacetate 128-08-5, N-Bromosuccinimide 7439-96-5,
Manganese, uses and miscellaneous 7440-45-1, Cerium, uses and
miscellaneous 7758-02-3, Potassium bromide, uses and miscellaneous
RL: CAT (Catalyst use); USES (Uses)
(catalysts contg., for **addn.** reaction of **acetaldehyde**
with ethene)

=> d bib abs 8

L38 ANSWER 8 OF 13 HCAPLUS COPYRIGHT 2002 ACS
AN 1987:33497 HCAPLUS
DN 106:33497
TI Polymerization of maleimides and maleic anhydride initiated by
triphenylphosphine: a phosphorus-31 NMR end-group study
AU Hodge, Philip; Khoshdel, Ezzatollah; Naim, Ahmedy A.
CS Chem. Dep., Univ. Lancaster, Lancaster, LA1 4YA, UK
SO Polym. Commun. (1986), 27(11), 322-3
CODEN: POCOEF
DT Journal
LA English
AB PPh3 [603-35-0] initiates the polymns. of maleimide [541-59-3] various
N-substituted maleimides, and maleic anhydride [108-31-6] ³¹P NMR
indicates that with maleimide and its derivs. the P is present in the
polymer in the form of phosphonium salts and the corresponding ylides.
This suggests that these polymns. are initiated by Michael **addn.**
of the phosphine to the monomer, then Michael **addn.** of the anion
formed to further monomer. In poly(maleic anhydride) [24937-72-2], the P
is present in the form of phosphonium salts that cannot form ylides. This
polymn. appears to involve Michael **addn.** of phosphine to monomer
then rearrangement of the anion formed to an ylide, which then reacts with
further monomer by Michael **addn.** and/or nucleophilic attack on a
carbonyl group.

=> d bib abs 9

L38 ANSWER 9 OF 13 HCAPLUS COPYRIGHT 2002 ACS
AN 1984:630965 HCAPLUS
DN 101:230965
TI Hydrocarbonylation of unsaturated nitrogen compounds. Synthesis of
N-protected amino acid derivatives from N-substituted phthalimides
AU Delogu, Giovanna; Faedda, Giovanni; Gladiali, Serafino
CS Ist. Chim. Appl., Univ. Sassari, Sassari, 07100, Italy
SO J. Organomet. Chem. (1984), 268(2), 167-74
CODEN: JORCAI; ISSN: 0022-328X
DT Journal
LA English
AB The **hydrocarbonylation** of some .beta.-substituted
N-vinylphthalimides catalyzed by Rh or Pd complexes is strongly affected
by the nature of the substituent and is completely prevented when two
substituents are present. The **addn.** of carbon monoxide, when it
occurs, takes place with complete selectivity and its direction can be
regulated to a large extent by selecting the reaction parameters. The
hydrocarbonylation of N-allylphthalimide occurs under mild
conditions, but the control of the regioselectivity is much less
efficient.

=> d bib abs 10

L38 ANSWER 10 OF 13 HCAPLUS COPYRIGHT 2002 ACS
 AN 1978:6274 HCAPLUS
 DN 88:6274
 TI Reaction of diethyl azodicarboxylate with ethers in the presence of
 N-hydroxyimides as catalysts
 AU Grochowski, Edward; Boleslawska, Teresa; Jurczak, Janusz
 CS Inst. Org. Chem., Pol. Acad. Sci., Warsaw, Pol.
 SO Synthesis (1977), (10), 718-20
 CODEN: SYNTBF
 DT Journal
 LA English
 AB Treating (EtO₂CN:)₂ with RCH₂OR₁ [RR₁ = (CH₂)₃, CH₂OCH₂CH₂, O(CH₂)₃; R =
 Pr, R₁ = Bu; R = Me, R₁ = Et; R = Ph, R₁ = PhCH₂] at 70-120.degree. for
 0.5-12 h in the presence of N-hydroxyphthalimide or -succinimide gave
 RCH(OR₁)N(CO₂Et)NHCO₂Et (I) in 94-7% yield. A free-radical mechanism is
 proposed. I (R = Pr, R₁ = Bu) on hydrolysis gave PrCHO, BuOH, and
 (EtO₂CNH)₂.

=> d bib abs 11

L38 ANSWER 11 OF 13 HCAPLUS COPYRIGHT 2002 ACS
AN 1976:123490 HCAPLUS
DN 84:123490
TI Study of the reaction of isocyanates with alcohols in the presence of organotin catalysts
AU Bakalo, L. A.; Sirotinskaya, A. L.; Dergunov, Yu. I.; Gerega, V. F.
CS Inst. Khim. Vysokomol. Soedin., Kiev, USSR
SO Sint. Fiz.-Khim. Polim. (1975), 16, 6-10
CODEN: SFKPAO
DT Journal
LA Russian
GI For diagram(s), see printed CA Issue.
AB The activities of 1,3,5-tris(tributyltin)-1,3,5-triazine-2,4,6-trione (I) [752-58-9] and N,N'-bis(tributyltin)carbodiimide (Bu₃SnN:C:NSnBu₃) (II) [34885-41-1] in catalyzing **addn.** of **alcs.** to isocyanates, and properties of polyurethane compns. contg. I or II, were compared with those of dibutyltin dilaurate (III) and Et₃N. Kinetics of **addn.** of 1-butanol [71-36-3] to butyl isocyanate [111-36-4] or phenyl isocyanate [103-71-9] indicated decreasing order of activities: III > I > II > Et₃N. Shelf-life of polyurethane compns. prepd. from biuret polyisocyanate and Polyester 10-67 and contg. I or II was 10 hr, as compared to <2 hr for a similar compn. contg. III. Relative hardness of polyurethane coatings prepd. in the presence of II, I, and III was 0.6-0.7, 0.5-0.6, and 0.8-0.9, resp.

=> d ind 11

L38 ANSWER 11 OF 13 HCAPLUS COPYRIGHT 2002 ACS
 CC 42-10 (Coatings, Inks, and Related Products)
 Section cross-reference(s): 22
 ST kinetics **alc** isocyanate **addn**; butanol isocyanate
addn catalysis; butyl isocyanate butanol **addn**; phenyl
 isocyanate butanol **addn**; tin catalyst urethane formation;
 butyltintriazinetriene catalyst urethane formation;
butyltin carbodiimide catalyst urethane formation;
 shelflife urethane coating; hardness urethane coating
 IT Urethane polymers, preparation
 RL: TEM (Technical or engineered material use); USES (Uses)
 (coatings, from biuret polyisocyanates and polyesters, tin catalysts
 for)
 IT Kinetics of **addition** reaction
 (of **alcs.** with isocyanates, in presence of tin catalysts)
 IT Coating materials
 (urethane polymers, prepn. of, tin catalysts for)
 IT 71-36-3, reactions
 RL: RCT (Reactant)
 (addn. of, to butyl and phenyl isocyanates, in presence of tin
 catalysts, kinetics of)
 IT 752-58-9 34885-41-1
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, for **addn.** of **alcs.** to isocyanates)
 IT 103-71-9 111-36-4
 RL: RCT (Reactant)
 (reaction of, with butanol, in presence of tin catalysts, kinetics of)

=> d bib abs 12

L38 ANSWER 12 OF 13 HCAPLUS COPYRIGHT 2002 ACS

AN 1959:11643 HCAPLUS

DN 53:11643

OREF 53:2149a-h

TI Addition of phthalimide to the esters of .alpha.,.beta.-unsaturated acids

AU Alekseeva, E. N.; Vaver, V. A.

CS D. I. Mendeleev Chem.-Technol. Inst., Moscow

SO Nauch. Doklady Vysshei Shkoly, Khim. i Khim. Tekhnol. (1958),
(No. 3), 545-9

DT Journal

LA Unavailable

AB In the presence of the Rodionov **catalyst**, **phthalimide**

(I) in a soln. of pyridine (II) is joined by a double bond to the esters of alkylidenemalic (III) and alkylideneacetoacetic acids. The acid hydrolysis of the phthalimide derivs. of the esters of III is used in the formation of .beta.-amino acids. I (0.1 mole) and 50 ml. dry freshly distd. II is heated until I dissolves and then during 30-40 min. added dropwise simultaneously from 2 funnels 0.1 mole ester of the unsatd. acid (in the case of benzylidene acetoacetic ester its soln. in II is used) and an **alc.** soln. of trimethylphenylammonium (IV) hydroxide. The catalyst, which should be obtained directly before use, is prepd. thus: 0.05 mole IV benzene- or p-toluenesulfonate (obtained by fusing equimolar quantities of freshly distd. dimethylaniline and Me benzene- or p-toluenesulfonate) is dissolved while heating in 20 ml. abs. EtOH, 1.1 g. Na in 20 ml. EtOH added, the soln. refluxed 15-20 min., cooled, the sepg. Na sulfonate filtered off, washed with 10 ml. EtOH and the **alc.** wash added to the main filtrate, after the **addn.** of the ester and the catalyst, oiling and stirring continued 1.5 hrs., the next day the solvent evapd. in vacuo at 60-5.degree., the residue repeatedly extd. with C6H6, the ext. sepd. from the unreacted I, repeatedly washed with 15% HCl to complete sepn. of II, and dried over Na2SO4. The residue after the evapn. of C6H6 is purified by crystn. from EtOH with activated C. In the case of the I deriv. of III a viscous liquid is obtained which is purified by dissolving many times in abs. EtOH, boiling with activated C, filtering, distg. the **alc.**, and drying in a vacuum dessicator to const. wt. The I derivs. of the substituted malic esters are hydrolyzed by boiling with a great excess of 15-20% HCl. The complete hydrolysis of the I derivs. of ethylidene-, propylidene-, and benzylidenemalic esters lasted 8-12 hrs. After cooling, phthalic acid (V) sepd. quantitatively. The hydrolysis of the I derivs. of isoamyl malate must be carried out with mech. stirring and the sepd. V must be filtered off. The filtrate is heated on a water bath, evapd. to dryness each time after a few **addns.** of 30-40 ml. H2O, the oil formed kept in a vacuum dessicator a few days over solid KOH until all excess HCl is sepd., dissolved twice in abs. EtOH, filtered, and evapd. in vacuo. The residue usually was a mixt. of oil and crystals. The crystals are taken up with abs. Et2O and filtered off. The yield of the unpurified .beta.-amino acid hydrochloride is 60-75%; .beta.-aminobutyric acid-HCl, m. 108-111.degree.; .beta.-aminoisoeanthic acid-HCl, m. 153-4.degree.. The .beta.-amino acids (the mixt. of oil and crystals) (0.01 mole) are dissolved while cooling (0.degree.) in 10 ml. 10% NaOH, 1.5 g. BzCl slowly added dropwise while stirring and cooling in ice, the stirring and cooling continued 1 hr., and the soln. acidified with dil. HCl sepg. a viscous oil which crystallizes on standing in ice. The residue is filtered off, washed with hot water, and recrystd. from EtOH. The % yield and the m.ps. of the following I derivs. are given: MeCH[N(CO)2C6H4]CH(CO2Et)2, 65, 75-6.degree. (**alc.**); EtCH[N(CO)2C6H4]CH(CO2Et)2, 60,

49-50.degree. (**alc.**); iso-BuCH[N(CO)2C6H4]CH(CO2Et)2, 50, viscous oil; PhCH[N(CO)2C6H4]CH(CO2Et)2, 52, 132-3.degree. (**alc.**); MeCH[N(CO)2C6H4]CHAcCO2Et, 12, 124-9.degree. (**alc.**); PhCH[N(CO)2C6H4]CHAcCO2Et, 39, 170-2.degree. (**alc.**). The Bz derivs. of the .beta.-amino acids: MeCH(NHBz)CH2CO2H, 87, 152.degree.; EtCH(NHBz)CH2CO2H, 72, 143-4.degree.; iso-BuCH(NHBz)CH2CO2H, 72, 136-7.degree. (**alc.**); PhCH(NHBz)CH2CO2H, 90, 192-3.degree..

=> d bib abs 13

L38 ANSWER 13 OF 13 HCAPLUS COPYRIGHT 2002 ACS

AN 1954:21773 HCAPLUS

DN 48:21773

OREF 48:3938b-i,3939a-c

TI The 1,1,6,6-tetrakis(methoxyphenyl)hexane series and the estrogenic activity of prepared compounds

AU Buchta, Emil; Weidinger, Hans

CS Univ. Erlangen, Germany

SO Ann. (1953), 580, 83-108

DT Journal

LA Unavailable

AB In the following compds. R, R', and R'' refer to p-, m-, and .omicron.-MeOC₆H₄, resp. In method (a), [(CH₂)₂CO₂Me]₂ was added dropwise to RMgBr (I) in Et₂O, followed by decompn. with ice H₂O, thus giving 11% [R₂C(OH)CH₂CH₂]₂ (II), m. 142-3.degree. (from BuOH). I (from 81 g. RBr) was nearly freed from Et₂O, treated with 200-250 cc. PhMe, then with 50 g. finely powd. [RCO(CH₂)₂]₂ in 15 small portions, and refluxed 3 hrs. to give 74 g. (89%) II, also obtained in very small amts. from [(CH₂CH₂)₂MgBr]₂ and R₂CO (III). By methods entirely analogous to (a) were prepd. 37% [R'₂C(OH)CH₂CH₂]₂ (IV), m. 137-9.degree. (from BuOH), and 145% [R''₂C(OH)CH₂CH₂]₂ (V), m. 226-8.degree. (from anisole). II (10 g., heated in 80 cc. glacial AcOH with 2 cc. HCl, yielded 97% (R₂C:CHCH₂)₂ (VI), yellowish green fluorescent needles, m. 108.degree. (from AcOH or BuOH). VI shaken in Me₂CO with KMnO₄ gave 38% III, m. 144.degree., and very small amts. of (CH₂CO₂H)₂ (VII), m. 177-82.degree.. VI (1 g.) in 100 cc. carefully dried CCl₄, treated with 4.8 l. O (contg. 1.8% O₃) gave a cryst. diozonide, which, heated 9 hrs. at 70-90.degree. with 100 cc. H₂O, 15 cc. AcOH, and 10 cc. perhydrol gave 0.88 g. III (2,4-dinitrophenylhydrazones, red, m. 197-8.degree.) and, in the filtrate, 53% VII. Formed similarly to VI were 70.2% (R'₂C:CHCH₂)₂ (VIII), colorless, m. 95-7.degree., and 95% (R''₂C:CHCH₂)₂ (IX), m. 158.degree.. With O₃, etc., VIII gave 60% R'₂CO, m. 191-2.degree., and 74% VII. IX gave a deep red color with H₂SO₄. VI (10 g.) refluxed 12 hrs. with 6 g. chloranil in 100 cc. xylene and let stand overnight, gave red crystals, which, washed with aq. Na₂S₂O₄, NaOH, and H₂O, and finally with MeOH, gave 7.1 g. [R₂C:CHCH:]₂ (X), yellow, m. 186-6.5.degree. (from AcOBu). Similarly formed were 43% [R'₂C:CHCH:]₂ (Xa), yellow, m. 140-2.degree., and (R''₂C:CHCH:)₂, m. 204-7.degree. (yield not given). VI in BuOH with Na gave 93% [R₂CH(CH₂)₂]₂ (XI), m. 91-2.degree. (from EtOH). Similarly formed from VIII was [R'₂CH(CH₂)₂]₂, m. 99-102.degree.. Powd. 4% Na-Hg (100 g.) shaken with 3.5 g. X in 60 cc. warm C₆H₆, 60 cc. MeOH added with vigorous shaking for 0.5 hr., addn. of Na-Hg and shaking repeated, and the C₆H₆ layer, washed with HCl and evapd. gave 3.2 g. 1,1,6,6-tetrakis(p-methoxyphenyl)-2,4-hexadiene (XII), yellowish green fluorescent crystals, m. 138.degree. (from AcOH), which gave XI when hydrogenated in tetrahydrofuran with Pd-C. Ozonization of XII gave an oily ozonide, yielding on decompn. 6.5% R₂CHCO₂H, m. 111.degree. [cf. Fritsch and Feldmann, Ann. 306, 75(1899)], and 18% III. Heated gradually to 290-320.degree., VI gave 41% R₂C:CHMe, m. 99.5-100.5.degree.. VI in CCl₄ with N-bromosuccinimide and Bz₂O₂ (catalyst) gave 85% (R₂C:CB₂CH₂)₂ (XIII), m. 169.degree. (from AcOH), also formed with Br in CCl₄ at -20.degree. (with evolution of HBr). XIII proved very resistant to KMnO₄ and CrO₃ (although in the latter case some III was isolated). XIII gave no AgBr when heated with 30% aq. AgNO₃ and no NaBr with BuONa. On the other hand, 1 g. XIII in 25 cc. hot BuOH to which Na was added very gradually, gave, after H₂O addn., about 94% of the theoretical amt. of Br- and 67.7% XI. XIII (1 g.) in 15 cc. glacial

AcOH stirred at 110-15.degree. with gradual addn. of Zn dust gave 68% VI. Ozonization of XIII in CCl₄ gave a cryst. ozonide, which with aq. AcOH and H₂O gave 82% III, 96-3% of the calcd. Br-, and 87% VII. (Ph₂C:CHCH₂)₂ with N-bromosuccinimide and Bz₂O₂ in CCl₄ gave no brominated product, but formed (Ph₂C:CHCH:)₂, yellow, m. 209.degree. (C.A. 46, 4513a). However VIII treated similarly gave 69% (R'²C:CHCHBr)₂ (XIV), microneedles, m. 162-4.degree. (decompn.) (from C₆H₆). XIV gives AgBr readily when shaken with aq. AgNO₃. IX in CCl₄ with Br gave 64% (R'²C:CHCHBr)₂ (XV), m. 190-1.degree. (from AcOH), and with N-bromosuccinimide and Bz₂O₂ it gave 14% XV and 26% of the more sol. (R'²C:CHCHBr)₂ (XVI), m. 155.degree. (decompn.) (from AcOEt), sepd. by fractional crystn. (The yield figures are min.) Whereas XV gives no AgBr with AgNO₃ in alc., XVI forms AgBr readily. The marked differences in bromination of VI, VIII, and IX are discussed, and the possible mechanism of XIII formation is described in some detail. Subcutaneous injections of the following compds. were given to young rats, with a view toward detg. their estrogenic activities: VI, X, XIII, XIV, VIII, and Xa. Of these VI, X, Xa, and XIII proved inactive, even up to 600 .gamma. in oil suspension. XIV showed a threshold value of 100 .gamma., whereas VIII showed marked activity (at 12 .gamma.) [about 1/4 that of "cyrene A", trans-(4-HO₆H₄CEt:)₂]. The differences in these estrogenic activities are discussed at length from the standpoint of chem. structure, (a relationship which is often quite obscure). 24 references.

TEXT

Solola 09/622,011

=> d ibib abs 1

L39 ANSWER 1 OF 6 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:326252 HCAPLUS

DOCUMENT NUMBER: 134:310982

TITLE: Preparation of benzaldehydes and/or benzoic acids

INVENTOR(S): Watanabe, Hitoshi; Hirai, Shigehisa; Shimamura, Mami; Miura, Hiroyuki

PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001122808	A2	20010508	JP 2000-240217	20000808
PRIORITY APPLN. INFO.:			JP 1999-229562	A 19990816
OTHER SOURCE(S): MARPAT 134:310982				

AB Title compds. are prepd. by oxidn. of toluenes with mol. O in the presence of N-substituted cyclic imide catalysts, extg. with **addn.** of H₂O, neutralizing org. phase with alkali aq. solns., recovering **benzaldehyde** from the org. phase, acidifying water phase, and recovery of benzoic acids. P-tert-butyltoluene was oxidized with O in the presence of N-hydroxyphthalimide and cobalt(II) acetate in AcOH at 90.degree. for 4 h to give 56.2% p-tert-butylbenzoic acid and 7.0% p-tert-butylbenzaldehyde, which were purified by extn.

=> d,ibib abs 2

L39 ANSWER 2 OF 6 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:772641 HCAPLUS

DOCUMENT NUMBER: 133:335330

TITLE: N-tri or di-alkylsilyl(perfluoroalkanesulfonyl)imide derivatives, preparation and use as Lewis acid catalysts

INVENTOR(S): Desmurs, Jean-Roger; Ghosez, Leon; Mathieu, Benoit

PATENT ASSIGNEE(S): Rhodia Chimie, Fr.

SOURCE: PCT Int. Appl., 48 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000064908	A1	20001102	WO 2000-FR1028	20000419
W: AE, AG, AL; AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
FR 2792636	A1	20001027	FR 1999-5195	19990423

PRIORITY APPLN. INFO.:

FR 1999-5195 A 19990423

OTHER SOURCE(S): CASREACT 133:335330; MARPAT 133:335330

AB The invention concerns N-tri or di-alkylsilyl(perfluoroalkylsulfonyl)imide derivs. $[(RfSO_2)_y(R(SO_2)_z)_n]_nSi(A)_m$ ($y = 1, 2$; $z = 0$ or 1 ; $yr + z = 2$; $Rf =$ halo (preferably F), poly- or perhaloalkyl with the chain contingently contg. .gtoreq.1 O or S atoms, poly- or perhaloaryl, RACF₂, RACF₂CF₂, RACF(CF₃)CF₂, CF₃CF(RA), (CF₃)RA (RA = R (see below) but not halo or polyhalo org. radical); R = Rf, alkyl or alkenyl possibly with O, S or **carbonyl** in chain and possibly with halo, carboxy or silyl groups as substituents, aryl possibly substituted by .gtoreq.1 halo, alkyl or alkenyl groups, aralkyl or aralkenyl possibly substituted by .gtoreq.1 halogen atoms, C(O)RE (RE = halo, C1-4 alkyl), OCRCRDRB (RB = perfluoroalkyl; RC, RD = radicals not contg. halogen); $n = 1, 2$; $m = 2, 3$ with $n+m = 4$; A = 2 or 3 identical or different substituents chosen from a long list of possibilities). The compds. possess at least one center or axis of chirality in the nucleus of their structure. The invention also concerns a method for prepg. said compds. and their use as Lewis acid catalysts in Diels-Alder, **carbonyl** allylation, ene, Prins and Michael **addn.** reactions. Enantiomeric excesses as high as 59% were obtained using chiral sulfonimides. The preparative method usually consisted of reacting a chlorosilane with the Ag salt of $(RfSO_2)_y(R(SO_2)_z)NH$ or reacting A₃SiPh or A₃SiCH:CH₂ with $(RfSO_2)_y(R(SO_2)_z)NH$.

REFERENCE COUNT:

7

THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d ibib abs 3

L39 ANSWER 3 OF 6 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:605433 HCAPLUS

DOCUMENT NUMBER: 123:10911

TITLE: Moisture- or anaerobic-curable and photocurable
silicone compositionsINVENTOR(S): Hara, Osamu; Hanazuka, Yasuo; Nakajima, Kunihiro;
Naruse, Kouichi

PATENT ASSIGNEE(S): Three Bond Co., Ltd., Japan

SOURCE: Eur. Pat. Appl., 10 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 628605	A2	19941214	EP 1994-303743	19940525
EP 628605	A3	19950118		
EP 628605	B1	19990804		
R: DE, GB				
JP 06345974	A2	19941220	JP 1993-177164	19930611
JP 07033987	A2	19950203	JP 1993-199914	19930720
US 5489622	A	19960206	US 1994-249812	19940526
PRIORITY APPLN. INFO.:			JP 1993-177164	19930611
			JP 1993-199914	19930720

AB The silicone compns. comprise an **addn.** reaction product of an organopolysiloxane having amino groups at both ends and a vinyl group-contg. isocyanate, a moisture-curing or anaerobic-curing catalyst, and a photopolymn. catalyst. The silicone compn. has high photocurability and moisture- or anaerobic-curability, and is easy to manuf. and easy to handle. Reacting 27 g N-benzylaminopropyltrimethoxysilane with 1000 g silanol-terminated di-Me siloxane, stirring the amino-terminated di-Me siloxane (100 g) with 1.1 g 2-cyanoethyl methacrylate at 50.degree. for 1 h, and adding 1 g 1-hydroxycyclohexyl Ph **ketone** and 0.5 g Bu₂Sn dilaurate gave a moisture- and UV-curable compn. with viscosity 15,000 cps.

=> d ibib abs 4

L39 ANSWER 4 OF 6 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1981:442712 HCAPLUS

DOCUMENT NUMBER: 95:42712

TITLE: Addition compounds from carbodiimides and compounds containing hydroxyl groups

INVENTOR(S): Schaefer, Walter; Wagner, Kuno; Findeisen, Kurt

PATENT ASSIGNEE(S): Bayer A.-G. , Fed. Rep. Ger.

SOURCE: Ger. Offen., 22 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2941253	A1	19810423	DE 1979-2941253	19791011
US 4321394	A	19820323	US 1980-190103	19800924
EP 27197	A1	19810422	EP 1980-105873	19800927
EP 27197	B1	19820825		

R: BE, DE, FR, GB, IT

JP 56077253	A2	19810625	JP 1980-140631	19801009
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PRIORITY APPLN. INFO.: DE 1979-2941253 19791011

AB The **addn.** reaction of carbodiimides with **alcs.** is catalyzed by 0.01-3% of an organotin compd., particularly $\text{Sn}(\text{O}_2\text{CCH}_2\text{tBu})_2$ (I). Thus $(\text{PhN:})_2\text{C}$ was treated with EtOH in the presence of I to give $\text{PhN:C}(\text{OEt})\text{NHPH}$ quant.

=> d ibib abs 5

L39 ANSWER 5 OF 6 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1981:176118 HCAPLUS

DOCUMENT NUMBER: 94:176118

TITLE: Addition compounds which contain phosphorus and their use as catalysts for the production of foam resins which contain carbodiimide groups

INVENTOR(S): La Spina, Andrea; Dietrich, Werner; Schliebs, Reinhard

PATENT ASSIGNEE(S): Bayer A.-G., Fed. Rep. Ger.

SOURCE: U.S., 14 pp. Cont.-in-part of U.S. Ser. No. 2,623, abandoned.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 4234694	A	19801118	US 1979-41124	19790521
PRIORITY APPLN. INFO.:			US 1973-394427	19730904
			US 1977-857059	19771205
			US 1979-2623	19790108

AB A mono- or polyhydric **alc.** with mol. wt. 32-250 is used with 1-methyl-1-oxophospholine (I) [31563-86-7], 3-chloro-1-methyl-1-oxophospholine, 1-methyl-1-oxophospholane, or a similar compd. to prep. **addn.** compds. which are useful as catalysts for the manuf. of carbodiimide group-contg. foams from polyisocyanates. The catalysts provide a long starting time and rapid foaming and give tough, dimensionally stable foams. Thus, 1000 g I was treated slowly at 50.degree. with 1430 g glycerol and heated at 100.degree. to prep. an oily **addn.** compd. [76528-77-3], which was mixed (17 g) with 1 g polyoxyalkylene-siloxane and 200 g crude diphenylmethane diisocyanate for 15 s. The mixt. foamed (rise time 90 s) and was tackfree after 95 s. The foam had d. 15 kg/m³, compressive strength 0.9 kg/cm², heat deformation temp. (DIN 53424) 130.degree., coeff. of thermal cond. 0.028 kcal/m-h-.degree.C, and good fire resistance.

=> d ibib abs 6

L39 ANSWER 6 OF 6 HCAPLUS COPYRIGHT 2002 ACS
 ACCESSION NUMBER: 1975:480002 HCAPLUS
 DOCUMENT NUMBER: 83:80002
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DE 2449987	A1	19750430	DE 1974-2449987	19741022
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US 3948941	A	19760406	US 1973-410210	19731026
CA 1042897	A1	19781121	CA 1974-210829	19741007
GB 1487633	A	19771005	GB 1974-44409	19741014
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BE 821490	A1	19750425	BE 1974-149887	19741025
FR 2249106	A1	19750523	FR 1974-35861	19741025
JP 50071673	A2	19750613	JP 1974-123281	19741025
JP 56021767	B4	19810521		
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AB Cyanide ions are effective catalysts for the prepn. of polyimides by polymn. of dianhydrides with diisocyanates. Thus, **addn.** of 7.5 g CH₂(C₆H₄NCO-p)₂ in 25 ml DMF to 9.6 g 4,4'-**carbonyldiphthalic** anhydride and 0.0147 g NaCN [143-33-9] in 50 ml DMF over 6 min at 22.degree. and stirring 65 hr gives a thick suspension of solid granules of polyimide [28704-23-6]. In the absence of NaCN a crosslinked gel is obtained.